

Department of Otorhinolaryngology



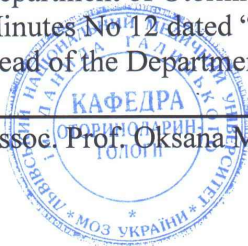
## DISCIPLINE PROGRAM

### OC-35 “OTORHINOLARYNGOLOGY”

**Second (master’s) level of higher education**  
**Field of Knowledge 22 “Healthcare”**  
**Specialty 222 “Medicine”**  
**Faculty, year: Medicine, 4<sup>th</sup> year**

Discussed and approved at the  
educational-methodical meeting of the  
Department of Otorhinolaryngology  
Minutes No 12 dated “8” June 2023  
Head of the Department

Assoc. Prof. Oksana MOSKALYK



Approved  
by the Profile Methodical Board on  
Surgical Disciplines  
Minutes No20 dated 27 April 2023  
Head of the Board

Prof. Viktor ANDRIUSHCHENKO

**The discipline program “Otorhinolaryngology” was developed and imported at the Department of Otorhinolaryngology of Danylo Halytsky Lviv National Medical University for the 4<sup>th</sup> year students of Medicine Faculty by the Specialty 222 “Medicine”.**

**Changes and additions to the study program of the discipline during 2024-2027 academic years.**

N	Content of changes (additions)	Minutes of the meeting of the Department, date	Notes

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КАФЕДРА ЛОР ЛНМУ

## INTRODUCTION

### **Description of the curriculum in the discipline "Otorhinolaryngology"**

Due to Standard of high school *second (master) degree*

Branch of knowledge 22 «Healthcare»

specialty 222 «Medicine»

qualification – Master of Medicine

### **Course description (abstract)**

The study of the discipline is carried out on the 4th year of studying. The program is designed to the integration of the educational process in high school and provides students with basic theoretical and clinical disciplines.

The discipline program consists of one module, which consists of the blocks of 4 content modules. The amount of student workload is described in ECTS credits - credits that are credited to students upon successful completion of the relevant module (credit).

Otolaryngology is a clinical discipline that studies the anatomy, physiology and pathology of the ear, upper respiratory tract and adjacent areas. The importance and necessity of its teaching at the final stage of physician's preparation is due to the fact that diseases of the upper respiratory tract are on the first places among human diseases and make up about 15% of all admittance to medical institutions. In addition, treatment of ENT diseases in time is a prevention of various pathologies of the internal organs, contributes to the prevention of such serious chronic diseases as rheumatism, polyarthritis, pyelonephritis, cholecystitis, pathology of blood vessels, nervous system, organ of vision and thus leads to long-term preservation of working possibilities and life.

Since 2019, acute respiratory disease COVID-19, caused by the SARS-CoV-2 coronavirus, has been a topical issue in otorhinolaryngology, one of the symptoms of which is impaired smell. At the department of otorhinolaryngology, research work, patient questionnaires were conducted. Patients underwent a short test and sent screenshots. The obtained results were highlighted in the topics of classes (practical and independent work) for students and in scientific publications. In 2022, taking into account the military operations in Ukraine, there were questions and discussions about the provision of emergency medical aid to the population during military operations.

Structure of educational discipline	Number of credits, hours				Year of study semester	Type of control
	All	Auditory		Independent work		
		Lectures (hours)	Practical classes (hours)			
<b>Otorhinolaryngology</b> <i>4 content modules</i>	<b>3 credits</b> <b>ECTS/</b> <b>90 hours</b>	<b>8</b>	<b>37</b>	<b>45</b>	<b>4 year</b> <b>VII / VIII</b> <b>semester</b>	<b>different</b> <b>ial credit</b>
<b>for semesters</b>						
<b>Otorhinolaryngology</b> <i>4 content modules</i>	<b>3 credits</b> <b>ECTS/</b> <b>90 hours</b>	<b>8</b>	<b>37</b>	<b>45</b>	<b>4 year</b> <b>VII / VIII</b> <b>semester</b>	<b>different</b> <b>ial credit</b>

**The subjects of study of the discipline** are clinical anatomy, physiology, investigation methods of ENT organs, etiology, pathogenesis, diagnosis and treatment of the most common diseases of ENT organs.

### **Interdisciplinary connections**

- medical and biological physics: to explain physical bases of diagnostic and physiotherapeutic (medical) methods used in medical equipment (PN.045); to interpret the general physical and biophysical patterns that underlie human life (PN.048);
- human anatomy, determine the topographic anatomical relationship of human organs and systems (PN.019); interpret sex, age and individual features of the structure of the human body (PN.033);
- microbiology, virology and immunology: to interpret the biological properties of pathogenic and non-pathogenic microorganisms, viruses and patterns of their interaction with macroorganism, with the human population and the external environment (PN.024); to interpret the basic mechanisms of the formation of the immune response of the human body (PN.052);
- histology, cytology and embryology: to interpret the microscopic structure of various organs of a person in the aspect of interconnections of tissues that are part of their composition in different age periods, as well as in the conditions of physiological and reparative regeneration (PN.051);
- physiology: to analyze the state of sensory processes in providing human life (PN.012); to explain the physiological bases of the methods of studying the function of the organism (PN.037);
- internal diseases: to determine the tactics of patient management in the most common therapeutic diseases (PP.053); to diagnose and provide emergency assistance for major emergency conditions in the Clinic of Internal Diseases (PP.085);
- surgery: to provide urgent medical care at the most common surgical diseases (PP.034); to plan a patient's examination, to interpret the results of laboratory and instrumental studies at the most common surgical diseases and their complications (PP.035);
- pathomorphology: to interpret etiology, pathogenesis and morphological changes at different stages of disease development, structural fundamentals of recovery, complications and consequences of diseases (PP.263);
- pathophysiology: to interpret the causes, mechanisms of development and manifestations of typical pathological processes (PP.208);
- radiology: to choose the optimal method of radiological examination for the detection of functional-morphological changes in the pathology of various organs and systems (PP.214);
- neurology: to determine the main symptoms and syndromes of lesions of different parts of the nervous system (PP.118);
- ophthalmology: to provide a preliminary diagnosis of the most common eye diseases and lesions (PP.257);
- phthisiology: to plan a survey of a patient with tuberculosis, to analyze the obtained data and to determine treatment regimens of patients with different clinical forms of tuberculosis (PP.076) and integrate with these disciplines;

## **1. Purpose and objectives of the discipline**

**1.1.** The purpose of teaching the discipline "Otorhinolaryngology" is to master the methods of diagnosis, treatment and prevention of diseases of ENT-diseases, especially the most common.

To achieve this educational goal, the student must know: clinical anatomy and physiology of ENT organs and current methods of their investigation; etiology, pathogenesis, clinic, methods of treatment and prevention of diseases of the nose, paranasal sinuses, pharynx, larynx, external, middle and inner ear, as well as their complications.

**1.2.** The main tasks of studying the discipline "Otorhinolaryngology" are studying the anatomy, physiology and pathology of the ear, upper respiratory tract and adjacent areas.

**The student should be able to:**

**1. Evaluate the results of the ENT examination:**

Use a head reflector and a headlamp.

Perform anterior rhinoscopy, evaluate the condition of the nasal cavity in the normal state and in case of deviations from the norm.

Perform posterior rhinoscopy, assess the condition of the posterior sections of the nose and nasal part of the pharynx in the normal and in case of deviations from the norm.

To perform an oropharyngoscopy, to assess the condition of the oral cavity and mouth part of the pharynx in normal and in case of deviations from the norm.

Perform an indirect laryngoscopy, assess the condition of the larynx of the pharynx and larynx in the normal and in case of deviations from the norm.

To carry out an otoscopy, to estimate a condition of external auditory channel and an eardrum in norm and in case of deviations from norm.

**2. Recognize the most common ENT diseases and their complications:**

Among the complaints and history of the patient to choose symptoms that give reason to suspect the presence of ENT diseases, to find out the causes of the disease. Evaluate and collate the most informative and objective signs of the disease. Compare subjective and objective data confirming the patient's diagnosis.

Investigate hearing with "live" language and tuning forks. To evaluate the typical types of audiograms in the normal case in case of disturbance of the sound-conducting, sound-receiving apparatus and their combined lesion.

To evaluate the data of radiological examination of radiographs of the nose and paranasal sinuses, temporal bone, pharynx, larynx, computer or magnetic resonance imaging.

To evaluate the data of laboratory methods of investigation (general analysis of blood, coagulogram, cerebrospinal fluid, contents of paranasal sinuses).

Establish a preliminary diagnosis and be able to perform differential diagnosis of ENT diseases.

**3. To prescribe treatment of these diseases.**

Draw up a survey plan for ENT authorities. To make a plan of treatment of the patient with the specified pathology.

If necessary, perform manipulations: lubricate the mucous membrane of the nasal and pharynx; conduct superficial anesthesia of the mucous membrane of the nasal and pharyngeal cavities;

To appoint appropriate treatment of ENT diseases, to draw up a scheme of treatment of patients.

**The student must master:**

**1. Typical endoscopic methods of ENT examination:**

- to carry out examination of an otolaryngological patient.

- perform endoscopy of ENT-organs, use a frontal reflector or a frontal illuminator, learn the technique and practice the technique of endoscopic examination of an otolaryngology patient (anterior and posterior rhinoscopy, oropharyngoscopy, indirect laryngoscopy).

**2. Practical skills:**

- be able to perform typical manipulations: flushing and toilet ear, removal of impacted cerumen and foreign body, the injection of ear drops into the tympanic cavity and auditory tube by compression method, dressing insertion into the ear, pneumatic massage of the eardrum, have an idea about the method of catheterization of the auditory tube.

- to carry out the following manipulations: taking swabs from the nose and throat, lubrication, irrigation and insufflation of the pharynx with medicinal substances, washing the lacunae, to investigate nasal breathing in children with pharyngeal tonsil hypertrophy.

- be able to perform infusion of drugs into the larynx, apply a compress to the neck.

- master the skills of using the tracheostomy cannula and the care of the tracheostomy.

### **3. Methods of first aid for patients with traumas, foreign bodies, bleeding from ENT-organs and stenosis of the upper respiratory tract:**

- to carry out the toilet of the nasal cavity, the insertion of turund into the common nasal passage, to anemize the mucous membrane of the nasal cavity, (application, infiltration).

- to perform the examination (external examination, palpation of the lymph nodes), to assess the condition of the mucous membrane (presence or absence of hyperemia, infiltration, edema, sufficiency of the glottis for breathing, mobility of structures of the larynx)

- to choose among the complaints and history of the patient the symptoms that give reason to suspect the presence of a foreign body, combined trauma. Perform a nose, throat and larynx examination. Select the most informative and objective signs that confirm the presence of foreign bodies, trauma, bleeding. To evaluate the data of radiographs, computer and magnetic resonance imaging. To make a plan of treatment of the patient with this pathology. Remove foreign bodies from the ear, nose and throat.

- make front and back nasal tamponade.

- provide first aid for trauma to the tympanic membrane, middle and inner ear contusions, othematomas.

- reposition the bone fragments of the nose. Apply a sling on the nose.

**The study of discipline** involves the curation of patients with writing a medical history, solving situational problems, conducting test, computer control in assessing the initial, current and final level of knowledge.

**1.3 Competencies and learning outcomes** facilitated by discipline (connections with the regulatory content of higher education applicants' training, formulated in terms of the learning outcomes of the Higher Education Standard).

In accordance with the requirements of the Higher Education Standard, the discipline provides students with competencies:

-general:

GC 1. Ability to abstract thinking, analysis and synthesis.

GC 2. Knowledge and understanding of the subject area and understanding of professional activity.

GC 3. Ability to apply knowledge in practical activities.

GC 4. Ability to communicate in the state language both orally and in writing.

GC 5. Ability to communicate in English.

GC 6. Skills in using information and communication technologies.

GC 7. Ability to search, process and analyze information from various sources.

GC 8. Ability to adapt and act in a new situation.

GC 9. The ability to identify, pose and solve problems.

GC 10. The ability to be critical and self-critical.

GC 11. Ability to work in a team.

GC 12. Efforts to preserve the environment.

GC 13. The ability to act socially responsibly and consciously.

GC 14. The ability to realize one's rights and responsibilities as a member of society, to realize 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.

GC 15. The ability to preserve and multiply 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, techniques and technologies, use different types and forms motor activity for active recreation and leading a healthy lifestyle.

**Special (professional, subject) competences (PC)**

- PC 1. Ability to collect medical information about the patient and analyze clinical data.
- PC 2. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
- PC 3. The ability to establish a preliminary and clinical diagnosis of the disease.
- PC 4. The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases.
- PC 5. The ability to determine the nature of nutrition in the treatment and prevention of diseases of patients.
- PC 6. Ability to determine the principles and nature of treatment and prevention of diseases.
- PC 7. Ability to diagnose emergency conditions.
- PC 8. Ability to determine tactics and provide emergency medical care.
- PC 9. Ability to carry out medical evacuation measures.
- PC 10. Ability to perform medical manipulations.
- PC 11. Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
- PC 12. Ability to carry out sanitary and hygienic and preventive measures.
- PC 13. Ability to plan and carry out preventive and anti-epidemic measures regarding infectious diseases.
- PC 14. Ability to conduct medical and social examination and examination of working capacity.
- PC 15. Ability to maintain medical documentation, including electronic forms.
- PC 16. Ability to assess the impact of the environment, socio-economic and biological determinants on the state of health of an individual.
- PC 17. The ability to analyze the activity of a doctor, unit, health care institution, ensure the quality of medical care for the population and increase the efficiency of the use of medical resources.
- PC 18. Ability to organize and integrate the provision of medical care to the population and marketing of medical services.
- PC 19. Ability to conduct epidemiological and medical-statistical research on the health of children and adults; processing of social, economic and medical information.
- PC 20. It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.
- PC 21. Ability to manage work processes in the field of health care, which are complex, unpredictable and require new strategic approaches
- PC 22. Ability to develop and implement scientific and applied projects in the field of health care.
- PC 23. Compliance with ethical principles when working with patients and laboratory animals.
- PC 24. Observance of professional and academic integrity, to be responsible for the reliability of the obtained scientific results.

Specification of competencies according to the descriptors in the form of the Competence Matrix.



**Competence Matrix.**

<b>Competence</b>	<b>Knowledge</b>	<b>Skill</b>	<b>Communication</b>	<b>Autonomy and responsibility</b>
<p>Ability to perform a subtest on the test tasks of the professional guidance of the licensing exam KROK-2 and to pass the exam in the discipline of otolaryngology of direction as a component of the state qualification exam;</p>	<p><i>To know:</i>                      - clinical anatomy and physiology of ENT organs and modern methods of their investigation;                      -etiology, pathogenesis, clinic, methods of treatment and prevention of diseases of the nose, paranasal sinuses, pharynx, larynx, external, middle and inner ear, as well as their complications.</p>	<p><i>To be able:</i>                      - evaluate the results of the ENT examination;                      -recognize the most common ENT diseases and their complications;                      - prescribe the treatment of these diseases.</p>	<p>Interpersonal interaction communication with teachers, students, patients                      Subject-objective interaction of the use of educational material</p>	<p>Independence, responsibility</p>
<p>Ability to master the technique of using the frontal reflector or headlight illuminator, learn the technique and practice the technique of endoscopic examination otolaryngological patient.</p>	<p><i>To know:</i>                      - procedure, technique and technique examination otolaryngological patient.                      -normal endoscopic picture of the nose, throat, larynx and ears, as well as possible typical abnormalities in their endoscopic picture. - clinical anatomy, ENT organs physiology, investigation methods.</p>	<p><i>To be able:</i>                      anterior and posterior rhinoscopy, oropharyngoscopy indirect laryngoscopy, otoscopy.</p>	<p>Interpersonal interaction communication with teachers, students, patients                      Subject-objective interaction of the use of educational material</p>	<p>Independence, responsibility</p>

Ability to carry out medical consultations;	<i>To know:</i> collect patient complaints, medical history, medical history, conduct examination: oropharyngoscopy, rhinoscopy, otoscopy, indirect laryngoscopy.	<i>To be able:</i> - evaluate the results of the ENT examination; -recognize the most common ENT diseases and their complications; - prescribe the treatment of these diseases.	Interpersonal interaction with teachers, students, patients Subject-objective interaction of the use of educational material	Independence, responsibility
Ability to register a patient's medical history, establish a diagnosis, prescribe treatment;	<i>To know:</i> describe and collect complaints, medical history of the patient's life, examination, to draw up a plan of examination, a plan of treatment.	<i>To be able:</i> - evaluate the results of the ENT examination;	Interpersonal interaction with teachers, students, patients Subject-objective interaction of the use of educational material	Independence, responsibility
Ability to conduct scientific research;	<i>To know:</i> writing reports, presentation design, application of literature	<i>To be able:</i> submit a report, to speak to an audience, answer the question	Interpersonal interaction with teachers, students, patients Subject-objective interaction of the use of educational material	Independence, responsibility
Ability to use modern information technology tools.	<i>To know:</i> writing reports, presentation design, application of literature	<i>Bmimu:</i> submit a report	Interpersonal interaction with teachers, students, patients Subject-objective interaction of the use of educational material	Independence, responsibility

**Compliance with the definition of standards of learning outcomes and competencies.**

<b>Program learning result code (PLR)</b>	<b>Learning outcome</b>	<b>Competency code (GC, PC)</b>
PLR1	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.	<b>GC1, GC2, GC3, GC4, GC5, GC6, GC7, GC8, GC9, GC10, GC11, GC12, GC13, GC14, GC15; PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC13, PC14, PC16, PC17, PC24, PC25.</b>
PLR2	Understanding and knowledge of basic and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.	<b>GC4, GC6, GC10, GC11, GC12; PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC13, PC14, PC15, PC17, PC24.</b>
PLR3	Specialized conceptual knowledge that includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.	<b>GC1, GC2, GC3, GC6, GC7, GC9, GC10, GC11, GC12; PC1, PC2, PC3, PC11, PC24, PC25.</b>
PLR4	Identify and identify leading clinical symptoms and syndromes; according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, to establish a preliminary clinical diagnosis of the disease.	<b>GC3, GC4; PC16, PC24.</b>
PLR5	Collect complaints, history of life and diseases, evaluate psychomotor and physical development of adult patients and children, state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information about the diagnosis, taking into account the age of the patient.	<b>GC1, GC2, GC3, GC6, GC7; PC1, PC2, PC3, PC7, PC8, PC11, PC16, PC24.</b>
PLR6	To establish the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, differential diagnosis, observing the relevant ethical and legal norms, under the control of the head physician in the conditions of the health care institution.	<b>GC1, GC2, GC3, GC6, GC7, GC8; PC1, PC2, PC3, PC7, PC8, PC11, PC16, PC24;</b>
PLR7	Prescribe and analyze additional (mandatory and optional) examination methods	<b>GC8; PC1, PC2, PC16, PC24.</b>

	(laboratory, X-ray, functional and/or instrumental) of patients with diseases of the organs and tissues of the oral cavity and maxillofacial area for differential diagnosis of diseases.	
PLR8	To determine the main clinical syndrome or what causes the severity of the victim's/victim's condition by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care facility, outside its borders), including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.	<b>GC3, GC4; PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC24.</b>
PLR9	Determine the nature and principles of treatment (conservative, operative) of patients with diseases, taking into account the age of the patient, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to substantiate personalized recommendations under the control of the head physician in the conditions of a medical institution.	<b>PC1, PC2, PC6, PC7, PC8, PC10, PC12;</b>
PLR 10	Determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.	<b>GC4; PC4,PC5, PC24.</b>
PLR11	To assess the general condition of a newborn child by making a reasoned decision according to existing algorithms and standard schemes, observing the relevant ethical and legal norms.	<b>GC4; PC1, PC2, PC3, PC6, PC7, PC8, PC12.</b>
PLR12	Assess and monitor the child's development, provide recommendations on feeding and nutritional features depending on age, organize preventive vaccinations according to the calendar.	<b>GC3, GC6, GC12; PC1, PC7, PC8, PC9, PC10, PC11.</b>
PLR13	Determine tactics and provide emergency medical care in emergency situations under conditions of limited time in accordance with existing clinical protocols and standards of treatment.	<b>GC5, GC7, GC8; PC1, PC7, PC11, PC17.</b>
PLR14	To organize the provision of medical aid and	<b>GC7, GC8.</b>

	medical evacuation measures to the population and military personnel in emergency situations and hostilities, including in field conditions.	
PLR15	Form rational medical routes for patients; organize interaction with colleagues in their own and other institutions, organizations and institutions; to apply tools for the promotion of medical services in the market, based on the analysis of the needs of the population, in the conditions of the functioning of the health care institution, its division, in a competitive environment.	<b>PC3,PC7, PC10, PC11.</b>
PLR16	Perform medical manipulations in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.	<b>GC14, GC15; PC7, PC11, PC17.</b>
PLR17	To determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of a person's professional activity, etc. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.	<b>PC13, PC14, PC17.</b>
PLR18	Determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution based on data on the disease and its course, the peculiarities of the professional activity of people. .we, etc. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.	<b>PC14.</b>
PLR19	Analyze the epidemiological situation and carry out measures for mass and individual, general and local prevention of infectious diseases.	<b>GC10, GC11.</b>
PLR20	Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.	<b>GC2, GC9, GC10.</b>
PLR21	Apply modern digital technologies, specialized software, and statistical data analysis methods to solve complex healthcare problems.	<b>GC5; PC13, PC17.</b>

PLR22	Assess the impact of the environment on the state of human health in order to assess the state of morbidity of the population.	<b>PC14, PC17.</b>
PLR23	To organize the necessary level of individual safety (own and the persons he cares for) in case of typical dangerous situations in the individual field of activity.	<b>GC7.</b>
PLR24	Clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.	<b>GC5, GC6; PC11, PC17.</b>
PLR25	Manage work processes in the field of health care, which are complex, unpredictable and require new strategic approaches, organize the work and professional development of personnel taking into account the acquired skills of effective teamwork, leadership positions, appropriate quality, accessibility and justice, ensuring the provision of integrated medical help	<b>GC2, GC8.</b>
PLR26	Communicate freely both orally and in writing to discuss professional activities, research and projects.	<b>GC5, GC6, GC7, GC8, GC15; PC11.</b>
PLR27	Make effective decisions about health care problems, evaluate the necessary resources, take into account social, economic and ethical consequences.	<b>GC12, GC15.</b>
PLR28	Plan, organize and carry out measures for the specific prevention of infectious diseases, including in accordance with the National calendar of preventive vaccinations, both mandatory and recommended. Manage vaccine residues, organize additional vaccination campaigns, including immunoprophylaxis measures.	<b>GC14, GC15; PC13, PC14.</b>

#### Learning outcomes:

Integrative end programmatic learning outcomes facilitated by the discipline:

- collect data on the patient's complaints, medical history, medical history of the patient,
- conduct an examination of ENT-organs: rhinoscopy, pharyngoscopy, otoscopy, indirect laryngoscopy.
- on the basis of the received data to determine the preliminary diagnosis, to plan the additional examinations, to choose the medical tactics.

#### **Learning outcomes for the discipline according to the levels of knowledge:**

1. Remembering, Knowledge – the ability to memorize or reproduce facts (terms, specific facts, methods and procedures, basic concepts, rules and principles of holistic theories, etc.)
2. Comprehension, Understanding – the ability to understand and interpret what has been learned. It means the ability to explain facts, rules, principles; convert verbal material into, for example, mathematical expressions; predict future effects based on the knowledge gained.

3. Applying – the ability to use the material learned in new situations, for example, to apply ideas and concepts to accomplish specific tasks.
4. Analyzing – the ability to break information into components, understand their relationships and organizational structure, see errors and flaws in reasoning logic, the difference between facts and consequences, evaluate the significance of data.
5. Synthesis (Creation, Creating) – the ability to combine parts together to obtain a whole with a new system property.
6. Evaluation – the ability to evaluate the importance of material for a specific purpose.

**1. Remembering knowledge:**

- learn the material in otolaryngology (terms);
- master the lecture material related to the subject of the discipline;
- play material related to content module topics.

**2. Understanding:**

- to associate anatomy, physiology with the cause of ENT diseases;
- to classify diseases with ENT pathology;
- differentiate and analyze the timing of the disease;
- Diagnose and differentiate based on complaints, history, and objective data other diseases of ENT organs.
- on the basis of complaints, medical history to draw conclusions: to appoint methods examination and treatment of patients with ENT pathology.

**3. Application:**

- solving situational tasks;
- use of knowledge in practice;
- diagnosis of the patient;
- examination of the patient, manipulation.

**4. Analysis:**

- recognize and analyze diagnosis;
- combine knowledge of basic medical disciplines and general knowledge;
- Have information retrieval tools to demonstrate processing and analysis skills information received.

**5. Synthesis:**

- create oral and written presentation in the specialty;
- to formulate search results.

**6 Evaluation:**

- to choose the educational material independently while performing the tasks of independent work;
- to combine the acquired knowledge during self-control;
- to evaluate the accuracy of information on the subject of the discipline.

## **2. Information volume of the discipline**

3 ECTS credits are allocated for the study of the discipline  
90 hours.

If there is a need to structure the discipline into 4 content modules:

### **Content modules:**

1. Clinical anatomy, physiology, investigation methods of ENT organs.
2. Diseases of the ear.
3. Diseases of the upper respiratory tract.
4. Emergency care for diseases of ENT-organs.

Duration of practical training in otorhinolaryngology – **3 hours**.

Clinical practice sessions consist of the following steps. The preparatory stage of the lesson consists of checking the presence of students and determining the topic and structure of the lesson. The main stage involves determining the students' up-to-date level of knowledge and considering the main issues of the topic of the lesson. This part of the class is about 20% of the practical training time. Then students under the guidance of the teacher in small groups (2-3 people) conduct curation of 3-4 thematic patients, mastering the necessary practical skills. At the end of the class, the teacher clarifies the students' learning of the material of the practical lesson, conducts correction of the level of knowledge and skills.

During the training, cycles of clinical disciplines will be rotated in accordance with the curriculum.

Students' current learning activities are monitored in practical classes according to specific goals. The following means of diagnostics of the level of preparation of students are applied: computer tests, solving of situational tasks, curation of thematic patients, interpretation of the data of laboratory and special researches characterizing the functional state of the upper respiratory tract and ears, control of practical skills, others.

Final control of the assimilation is carried out upon its completion.

Assessment of student achievement in the discipline is a rating and is ranked on a multi-scale scale as an arithmetic mean of mastering the module and has the ECTS system definition and the traditional scale adopted in Ukraine.



### 3. Structure of the discipline

Topic	lecture	Practical classes	Independent work	Individual work
<b>Content module 1. Clinical anatomy, physiology, methods of investigation of ENT organs</b>				
1. Topic 1. Introduction to specialty, Endoscopic examination of ENT. Clinical anatomy, physiology, methods of investigation of external and middle ear.	-	3	3	
2. Topic 2. Clinical anatomy, physiology, methods of investigation of hearing and vestibular apparatus.	-	3	3	
3. Topic 3. Clinical anatomy, physiology, methods of investigation of nose, paranasal sinuses, pharynx, larynx. Chemosensory and sinonasal dysfunction due to SARS-CoV-2 (COVID-19).	-	3	4	
<b>Total in content module 1</b>	-	<b>9</b>	<b>10</b>	
<b>Content module 2. Ear diseases.</b>				
1. Topic 4. Diseases of external and middle ear: impacted cerumen, external otitis, acute purulent otitis media, mastoiditis, antromastoidectomy. Complications.	1	3	-	
2. Topic 5. Chronic ear diseases: chronic purulent otitis media (mesotympanitis, epitympanitis), labyrinthitis, ear surgery, tympanospaty. Complications.	1	3	5	
3. Topic 6. Nonpurulent ear diseases: nonpurulent otitis media, sensorineural hearing loss, otosclerosis, Meniere's disease.	-	3	5	
<b>Total in content module 2</b>	<b>2</b>	<b>9</b>	<b>10</b>	
<b>Content module 3. Diseases of the upper respiratory tract.</b>				
1. Topic 7. Acute and chronic nose diseases.	1	3	3	
2. Topic 8. Acute and chronic diseases of the sinuses (including symptoms of SARS-CoV-2 (COVID-19)). Rhinological intracranial and orbital complications.	1	3	5	
3. Topic 9. Acute and chronic pharyngeal diseases. Complications.	1	3	3	
4. Topic 10. Chronic pharyngeal diseases	1	3	1	
5. Topic 11. Acute and chronic laryngeal diseases.	1	3	3	
6. Topic 12. Traumas, foreign bodies and hemorrhages of the ENT, urgent care.	1	2	5	
<b>Total in content module 3</b>	<b>6</b>	<b>17</b>	<b>20</b>	
<b>Content module 4. Tumors of the ENT organs</b>				
1. Topic 13. Tumors and infectious granulomas of the ENT organs. Credit	-	2	5	
<b>Total in content module 4</b>	-	<b>2</b>	<b>5</b>	
<b>Total hours 90/12 credits ECTS</b>	<b>8</b>	<b>37</b>	<b>45</b>	
<b>Final control</b>				<b>Credit with mark</b>

**4. TOPIC PLAN OF LECTURES OF OTORHINOLARYNGOLOGY  
for students of General Medicine faculty**

<b>№</b>	<b>Topic</b>	<b>Hours</b>
1.	External otitis. Acute purulent otitis media. Mastoiditis. Chronic otitis media. Otogenic intracranial complications.	2
2.	Nose and paranasal sinuses diseases. Rhinogenic orbital and intracranial complications.	2
3.	Acute and chronic tonsillitis. Complications. Laryngeal diseases	2
4.	ENT emergencies.	2
	<b>Total</b>	<b>8</b>

**5. TOPIC PLAN OF PRACTICAL LESSONS OF OTORHINOLARYNGOLOGY  
for the students of General Medicine faculty**

<b>№</b>	<b>Topic of the lesson</b>	<b>Hours</b>
1.	Endoscopic examination of ENT. Clinical anatomy, physiology, methods of investigation of external and middle ear.	3
2.	Clinical anatomy, physiology, methods of investigation of hearing and vestibular apparatus.	3
3.	Clinical anatomy, physiology, methods of investigation of nose, paranasal sinuses, pharynx, larynx, bronchi and esophagus. Chemosensory and sinonasal dysfunction due to SARS-CoV-2 (COVID-19).	3
4.	Diseases of external and middle ear. Acute purulent otitis media. Mastoiditis.	3
5.	Chronic purulent otitis media and its complications. Labyrinthitis. Otogenic intracranial complications.	3
6.	Nonpurulent ear diseases.	3
7.	Acute and chronic nose diseases.	3
8.	Acute and chronic diseases of the paranasal sinuses (including symptoms of SARS-CoV-2 (COVID-19)). Rhinogenic intracranial and orbital complications.	3
9.	Acute pharyngeal diseases.	3
10.	Chronic pharyngeal diseases.	3
11.	Acute and chronic laryngeal diseases.	3
12.	Traumas, foreign bodies and hemorrhages of the ENT, airways and esophagus, urgent care.	2
13.	Tumors of the ENT organs. Infectious granulomas of the upper airways.	2
	<b>Total</b>	<b>37</b>

## 6. TOPIC PLAN OF INDEPENDENT WORK OF OTORHINOLARYNGOLOGY for the students of General Medicine faculty

№	Topic of a lesson	Hours
1.	Differential diagnosis of sound conduction and sound perception disorders.	2
2.	Otogenic intracranial complications, otogenic sepsis.	2
3.	Nasal valve, osteomeatal complex.	2
4.	Deformation of the external nose, rhinoplasty.	3
5.	Functional voice disorders.	3
6.	Physiology of lymph adenoid pharyngeal ring	3
7.	Methods of olfactory research. Olfactory disorders due to SARS-CoV-2 (COVID-19). Rehabilitation methods for olfactory disorders.	3
8.	Allergic diseases of the ENT organs.	3
9.	Mycosis of the ENT organs.	3
10.	Complications of acute tonsillitis	3
11.	Phytotherapy in otorhinolaryngology.	3
12.	Physiotherapy in otorhinolaryngology.	3
13.	Nasal bleedings.	3
14.	Foreign bodies of the ENT organs.	3
15.	Pharyngeal cancer.	3
16.	Damage to the ENT organs in combat (acutrauma, barotrauma).	3
	Total	45

### 7. Teaching methods

During practical classes videos are shown where the teachers of the department describe the fundamental moments in the anatomy and physiology of ENT organs, as well as diagnostic methods of ENT diseases. In addition, clinical analyzes of individual situations are conducted on examples of patients of the clinic, situational problems are solved.

### 8. Control methods:

The discipline program consists of a module, consisting of 4 content modules. The amount of student workload is described in ECTS credits of credit credits, which are credited to students upon successful completion of the corresponding module (credit).

The discipline is structured into 1 module.

During the course of otorhinolaryngology, students have the opportunity to work with models who work on methods of diagnosis and treatment of certain ENT pathology. In the practical classes videos are shown where the teachers of the department describe the basic moments in the anatomy and physiology of ENT-organs, as well as methods of diagnosis of ENT-diseases. In addition, clinical analyzes of individual situations are conducted on the examples of patients of the clinic. Students supervise patients and write medical records. At each practical session each student solves a situational cases in the KROK-2 format.

Assessment of students' knowledge is done after completing all kinds of work, which the student is obliged to perform during current, final control, independent work, individual tasks and criteria for their assessment.

- Types of control (current and final)
- Form of final control according to the curriculum (credit, differentiated credit, exam)
- Evaluation criteria

### Forms of control and evaluation of discipline

When assessing students' knowledge, preference is given to standardized methods of control: testing (oral, written, computer), structured writing, structured control of practical skills.

The discipline grade is defined as the average of the grades for the two modules into which the discipline is structured.

The module score is defined as the sum of the assessments of the current learning activity and the assessment of the final module control and is expressed by a 200 point system.

## **9. Forms of control**

*Current control* is carried out at each practical session according to the specific objectives of the topic. All practical training is subject to objective control of theoretical training and the acquisition of practical skills.

### **Forms of current control:**

*Theoretical knowledge* - test tasks, individual interviewing, interviewing, writing.

*Practical skills and abilities* - independent performance of examination and treatment of patients and ability to draw conclusions of the ability to independently perform separate examinations of manipulation, writing of medical histories.

## **10. Current control.**

*Assessment of current progress is carried out on every practical lesson on a 4-point scale scale.* The current educational activity of students is controlled by practical classes in accordance with specific goals. The following means of diagnosing the level of preparation of students are used: descriptive theoretical issues, solving situational problems, case of thematic patients, interpreting data of laboratory and special studies characterizing the functional state of the upper respiratory tract and ear, control of practical skills, others.

Continuous control of the results of students' educational activities in the compulsory and selective disciplines is carried out in order to test the knowledge, skills and abilities of students during the classroom, as well as to check the results of the performance of independent work.

The task of current control is to check the level of student's readiness to perform a specific job: mastering the appropriate educational material, acquiring knowledge and skills to solve specific issues and situations, the ability to independently process texts, the ability to understand the essence of the content of the material of the material, the formation of skills to practice publicly or in writing substantiate your own point of view, ability to work in a team, ability to be responsible for the recommendations provided and decisions made, etc.

Current control is performed on the basis of a comprehensive assessment of the student's activities and acquired competences (knowledge, skills, etc.), which includes control of the entrance level of knowledge, quality of practical work, the level of theoretical training and the results of the initial control of the level of knowledge. Forms of current control are determined by the department and reflected in the curriculum of the discipline of Otolaryngology.

Forms of assessment of current educational activity at the department are standardized and include control of theoretical and practical training.

The results of current control (current achievement) are an indicator of the students' level of mastering the curriculum and fulfill the requirements of students' independent work.

Assessment of students' current academic performance is carried out at each practical session on a 4-point scale, using approved assessment criteria for the discipline and recorded in the academic record of academic achievement. This takes into account all types of work and the list of competences provided by the program of the discipline and methodical development for the study of the topic. The student must receive a grade on each topic.

*Students' knowledge is evaluated both from theoretical and practical training on such criteria:*

**"Excellent"** – Student perfectly mastered the theoretical material shows a deep and comprehensive knowledge of the relevant subject or discipline, basic provision of scientific source material and recommended reading, logical thinking and builds respond freely use the acquired

theoretical knowledge in the analysis of practical material expresses his attitude to various problems, demonstrates a high level of mastering of practical skills;

**"Good"** – The student has mastered theoretical material well, he has the main aspects from the primary sources and the recommended literature, he reasonably teaches him; has practical skills, expresses his thoughts on certain problems, but some inaccuracies and errors are assumed in the logic of presentation of theoretical content or in the analysis of practical;

**"Satisfactory"** – the student has mastered the theoretical knowledge of the discipline, is oriented in the primary sources and recommended literature, but is unconvincingly responsible, confuses the concept, additional questions cause the student uncertainty or lack of stable knowledge of practical nature, reveals inaccuracy in knowledge, does not know how to evaluate the facts and phenomena, 'use them with future activities;

**"Not deceptively"** – the student has not mastered the educational material of the subject (discipline), does not know scientific facts, definitions, is almost not oriented in the primary sources and recommended literature, there is no scientific thinking, practical skills are not formed.

Control work for full-time students can be conducted in the form of testing; solving practical problems; solving practical situations; demonstration of practical skills.

The criteria for assessing each component of current control and the specific forms of control measures are defined in the course curriculum and reflected in appropriate methodological materials. The department informs students about the procedure, content and criteria of current control at the first lesson of the discipline.

*A student is considered to be admitted to semester control (offset) if he has completed all types of work provided for by the curriculum and the work program.*

#### **11. The form of final control of the study is differential credit.**

Semester credit is a form of final control, which consists in assessing the student's learning of the study material solely on the basis of the results of performing certain types of work in practical, seminars or laboratory classes. The semester credit for the subjects is taken after the completion of its study, before the exam session.

#### **12. Score from the discipline "Otorhinolaryngology"**

*The maximum number of points*, which student can gain for the current study activity for the semester for admission to the exam is 200 points.

*The minimum number of points*, which student should collect for the current study activity for the semester for admission to the exam is 120 points.

#### **Assessment in the discipline "otorhinolaryngology"**

*Maximum scores* the student can receive for the current academic activity for the semester for admission to the exam is 120 points.

*Minimum scores* the student can receive for the current academic activity for the semester for admission to the exam is 72 points.

*The calculation of the number of points* is based on the grades obtained by the student on the traditional scale during the study of the discipline, by calculating the arithmetic mean (A), rounded to two decimal places. The value obtained is converted into points on a multi-point scale as follows:

$$x = \frac{A \times 120}{5}$$

## Recalculate the average for current activity in a multi-scale scale

4- point scale	200- point scale	4- point scale	200- point scale	4- point scale	200- point scale	4- point scale	200- point scale
5	120	4.45	107	3.91	94	3.37	81
4.95	119	4.41	106	3.87	93	3.33	80
4.91	118	4.37	105	3.83	92	3.29	79
4.87	117	4.33	104	3.79	91	3.25	78
4.83	116	4.29	103	3.74	90	3.2	77
4.79	115	4.25	102	3.7	89	3.16	76
4.75	114	4.2	101	3.66	88	3.12	75
4.7	113	4.16	100	3.62	87	3.08	74
4.66	112	4.12	99	3.58	86	3.04	73
4.62	111	4.08	98	3.54	85	3	72
4.58	110	4.04	97	3.49	84	<b>Less 3</b>	<b>Not enough</b>
4.54	109	3.99	96	3.45	83		
4.5	108	3.95	95	3.41	82		

### 12. Score from the discipline "Otorhinolaryngology"

**The maximum number of points** that a student can earn when compiling a differential test is 80.

**The minimum number of points** at differential test - not less than 50.

Forms of differential assessment must be standardized and include theoretical and practical training reflected in the course curriculum.

**The grade from the discipline** that completes the differentiated test is defined as the sum of points for current educational activity (not less than 72) and points for completing individual test tasks in the last lesson (not less than 50).

The points from the course are independently converted to the ECTS scale and to the 4-point (national) scale. ECTS points are not converted to the 4-point scale and vice versa.

The points of students studying in one specialty, based on the number of points earned from the discipline, are ranked on the ECTS scale as follows:

Score ECTS	Statistical indicator
A	Top 10 % of students
B	Next 25 % of students
C	Next 30 % of students
D	Next 25 % of students
E	Last 10 % of students

Ranking with assignment of grades "A", "B", "C", "D", "E" is made for students of this course, who study in one specialty and have successfully completed the study of the discipline. Students who

have received FX, F ("2") grades are not included in the ranked students list. Students with an FX score automatically receive an "E" grade upon transfer.

Discipline points for students who have successfully completed the program are converted to the traditional 4-point scale by the absolute criteria given in the table below:

Discipline points	4-point scale
From 170 to 200 points	5
From 140 to 169 points	4
From 139 points to the minimum number of points a student must score	3
Below is the minimum number of points a student must score	2

The ECTS score is not converted to the traditional scale because the ECTS scale and the four-point scale are independent.

The objectivity of the evaluation of student learning activity is verified by statistical methods (the correlation coefficient between the ECTS grade and the national scale grade).

### 13. Methodological support

According to the updated educational programs, the staff of the Department of Otorhinolaryngology of the Danylo Halytsky LNMU has created a complete educational and methodological complex to ensure the pedagogical process at the department. The following textbooks and teaching aids have been issued for the students of higher medical institutions of the III-IV levels of accreditation in order to improve the assimilation of ear, throat and nose diseases.

*Propedeutics of Otolaryngology (textbook), 2019*

*Emergency in otolaryngology (textbook) 2019*

Tutorials, lecture materials, methodical instructions updated sections of situational tasks, sections of test tasks for preliminary control in the discipline of "Otolaryngology", updated list of questions for final control and a list of practical skills, thematic plans for independent work of students.

1. Materials for preparation for lectures.
2. Presentation of lectures.
3. Preparation materials for practical classes
4. Methodical instructions for practical classes.
5. Tasks for students to work independently and individually.
6. Test tasks for the final test module control.
7. Test tasks for daily control.
8. Variants of theoretical questions for independent study

### 14. Recommended literature

Basic:

1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. – Kyiv: «MEDICINE». – 2020. – 264 p.

Additional:

1. Cummings Otolaryngology: Head and Neck Surgery, Paul W. Flint; Bruce H. Haughey et al. - 7th edition. – Elsevier. – 2020. – 3568 p.
2. ENT Secrets. Melissa A. Scholes, Vijay R. Ramakrishnan. — 5th edition. – Elsevier. – 2022. – 604 p.

3. Roland, N. Key Topics in Otolaryngology and Head & Neck Surgery/ ed. : N. Roland, D. McRae, A. W. McCombe. - 3rd ed. - Stuttgart ; New York : Thieme, 2019. - 490 p. : il. - Index: p. 479-490. – ISBN 978-3-13-240477-9
4. Flint, P. W. Cummings Otolaryngology. Head and Neck Surgery : international edition / P. W. Flint, H. W. Francis, B. H. Haughey [et al.]. - 7th ed. - Philadelphia : Elsevier, 2021 - . - ISBN 978-0-323-61179-4. - Vol. 3. - 1316 p.
5. Fokkens W.J., Lund V.J., Hopkins C. et al. (2020) European Position Paper on Rhinosinusitis and Nasal Polyps 2020. Rhinology, 58(Suppl. S29): 1–464. doi: 10.4193/Rhin20.600.

#### **Information resources**

1. <https://www.bmj.com/>
2. <https://www.uptodate.com/>
3. <https://www.clinicalkey.com/>
4. <https://www.osmosis.org/>
5. <https://3d4medical.com/>
6. <https://pubmed.ncbi.nlm.nih.gov/>
7. website of the National Library of Ukraine named after V.I. Vernadsky
8. -website of the National Scientific Medical Library of Ukraine
9. -An electronic database of scientific publications from the National Medical Library of the National Institutes of Health of the United States.
10. Educational portal of NMU named after O.O. Bogomolets.
11. <http://anatomia.at.ua/>
12. <http://www.anatomyatlases.org/>
13. <https://aclandanatomy.com/>
14. <http://www.anatomatlas.com/>
15. <http://www.healthline.com/human-body-maps>