# SYLLABUS

## 1. General information on the course

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| **Full course name** | Otorhinolaryngology |
| **Full official name of a higher education institution** | Sumy State University |
| **Full name of a structural unit** | Medical Institute. Department of Public Health |
| **Author(s)** | Smiianov Vladyslav Anatoliiovych, Smiianov Yevhen Vladyslavovych, Plakhtiienko Inna Oleksandrivna |
| **Cycle/higher education level** | The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle |
| **Semester** | 2 weeks across 7 semester |
| **Workload** | 5 ECTS credits 150 hours, of which 36 hours is contact work with the teacher (36 hours of practical classes), 114 hours - independent work. |
| **Language(s)** | English |

## 2. Place in the study programme

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| **Relation to curriculum** | Elective course available for study programme "Medicine" |
| **Prerequisites** | There are no specific pre-requisites |
| **Additional requirements** | There are no specific requirements |
| **Restrictions** | There are no specific restrictions |

## 3. Aims of the course

Acquisition by students of modern constructive, fundamental, and clinical thinking and system of special knowledge in the field of otorhinolaryngology, certain knowledge of etiology, pathogenesis, classification, symptoms, and differential diagnosis of major diseases of the ENT organs; mastering modern methods of examination and treatment of patients with ENT pathology.

## 4. Contents

| **Module 1. Clinical anatomy, physiology, research methods ENT organs.** |
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| Topic 1 Endoscopic methods of ENT organs examination.<br>Mastering the use of the frontal reflector, rhinoscopy, oropharyngoscopy, otoscopy, laryngoscopy, examination of the patency of the ear canal. Endoscopic methods of examination of the nose, pharynx, larynx, trachea, bronchi, esophagus. Work with hospital medical equipment: endoscopic methods of examination of the ear, nose, pharynx, larynx using an endoscopic stand. |

Topic 2 Clinical anatomy, physiology and methods of examination of the outer, middle and inner ear. Methods of research of auditory and vestibular analyzers.

Clinical anatomy of the outer ear. The structure of the eardrum. The system of the cavities of the middle ear, the walls of the tympanic cavity, its contents. Types of structure of the mammary process. The structure of the curls. Leading paths of the auditory analyzer. Bone sound conduction. Theories of sound conduction and sound perception. Clinical anatomy of the labyrinth, the receptor apparatus of the dorsum and semicircular canals. Transmission, transformational, adaptive and protective roles of the middle ear in the mechanism of sound conduction. Conditioned-reflex methods of hearing research in children. Adequate stimuli of the ampullary and otolithic apparatus. Nystagmus, its characteristics, patterns. Modern methods of vestibulometry: coordination, caloric, rotational, pressor test, electronystagmography, stabilography. The value of age features of the outer and middle ear in the pathology of childhood. Research of auditory function: determination of hearing acuity by language, tuning forks. Principles of threshold audiometry. Above-threshold, speech audiometry. Objective methods of hearing research. Impedance audiometry: main types of tympanograms, acoustic reflex studies.

Topic 3 Clinical anatomy, physiology and methods of examination of the nasal cavity, pharynx, larynx, trachea, bronchi, esophagus.

The structure of the outer nose. The nasal cavity, the structure of its walls. Functional departments of the nasal cavity. Blood supply and innervation of the nasal system. Clinical and topographic relations of the lattice labyrinth, maxillary, frontal, wedge-shaped sinuses and surrounding anatomical formations. Features of the structure of the nasal system in childhood. Methods of research of a nasal cavity and paranasal sinuses. Anatomical formations of the nasopharynx, oropharynx, larynx. Structure and functions of the lymphadenoid pharyngeal ring. Topography of the larynx. Cartilage, joints and ligaments of the larynx. Blood supply and innervation of the larynx. The value of age features of the anatomy of the pharynx and larynx in the pathology of childhood. The structure of the trachea. Departments of the trachea and its topographic and anatomical connections. The structure of the bronchi. Blood supply, lymph outflow and innervation of the tracheobronchial system. The structure of the esophagus, blood supply, innervation. Departments of the esophagus and their topography. Anatomical and physiological narrowing of the esophagus. Examination of the nasal cavity, pharynx, larynx using an endoscopic stand.

**Module 2. Diseases of the ear.**

Topic 4 Diseases of the outer ear.

Otitis externa (boil, diffuse inflammation of the external auditory canal), otomycosis, erysipelas, perichondritis, eczema, otohematoma, sulfur plug. Etiology, pathogenesis, clinical symptoms, methods of treatment of diseases of the outer ear. Methods of removing the sulfur plug and foreign bodies of the ear.

Topic 5 Diseases of the middle ear. Acute purulent otitis. Mastoiditis. Anthromastoidotomy.

Ways of infection in the middle ear. Stages of acute purulent otitis media, clinic, diagnosis. Evaluation of otoscopy data in patients with acute otitis media. Schuller radiographs of the temporal bones, CT and MRI examination of the ear. Justification of the diagnosis, the choice of rational treatment tactics depending on the stage of the disease. Indications for paracentesis. Paracentesis technique. Features of the course of acute purulent otitis media in infectious diseases and in childhood. Consequences of the disease. Etiology, pathogenesis, classification, clinic of mastoiditis. Differential diagnosis of acute purulent otitis media, mastoiditis with otitis externa. Principles of treatment (conservative and surgical) depending on the stage of mastoiditis. Indications for anthromastoidotomy. Atypical forms of mastoiditis.

Topic 6 Chronic purulent otitis media, labyrinthitis. Sanitizing and hearing restoration operations of the ear.

The role of diseases of the upper respiratory tract, the immunological state of the body and allergic factors in the genesis of chronic purulent otitis media. Mesothympanitis and epitympanitis, cholesteatoma, differential diagnosis. Basic principles of conservative and surgical treatment of meso- and epitympanitis. Indications for radical ear surgery, its stages. Indications for auditory reconstructive surgery. Tympanoplasty. Labyrinthitis. Ways of infection to the inner ear. Clinical forms (limited, diffuse, serous, purulent, necrotic labyrinthitis), diagnosis and treatment. Evaluation of otoscopy, audiometry and tympanometry data in patients with chronic otitis media. Schuller radiographs of the temporal bones, CT and MRI examination of the ear.

Topic 7 Non-purulent ear diseases. Intracranial complications.

Acute and chronic catarrh of the middle ear, exudative otitis media. Otoscopy data, study of auditory function. Methods of conservative and surgical treatment: tympanopuncture, myringotomy, shunting of the tympanic cavity. Sensorineural hearing loss - etiological classification, pathogenesis, comprehensive diagnosis, acumetric data, modern methods of conservative treatment. Prevention of auditory nerve diseases. Otosclerosis - pathomorphological changes in the temporal bone, clinical symptoms, acumetry and vestibulometry data. Principles of conservative and surgical treatment. Stapedectomy and stapedoplasty. Meniere's disease. Prevention of hearing disorders. The value of deaf centers in the medical examination of patients with ear diseases. Intracranial complications of middle and inner ear diseases. Evaluation of otoscopy, audiometry and tympanometry data in patients with non-purulent ear diseases. The results of CT and MRI in intracranial complications of otitis media.

**Module 3. Diseases of the upper respiratory tract.**

Topic 8 Acute diseases of the nose.

Deformation of the outer nose and nasal septum. Rhinoplasty. Sycosis, eczema, erysipelas, rhinophyma, boils and carbuncles of the nose, possible complications. Principles of treatment. Acute rhinitis. The role of infection in the occurrence of acute rhinitis, susceptibility to the disease. Clinical stages. Principles of treatment. Differential diagnosis of acute rhinitis, influenza, acute respiratory viral infection. Features of the clinical course of acute rhinitis in infants. Modern methods of treating diseases of the nose. Features of treatment of nasal diseases in childhood. Evaluation of nasal endoscopy data, X-ray results and computed tomography of the paranasal sinuses in patients with acute and chronic nasal diseases.

Topic 9 Chronic diseases of the nose.

The main forms of chronic rhinitis (catarrhal, hypertrophic, atrophic, vasomotor), clinic, diagnosis, treatment. Ozen, etiology, pathogenesis, clinic, methods of treatment. Allergic rhinitis. Seasonal allergic rhinitis (polyposis, hay fever). Year-round allergic rhinitis. Allergy diagnostics in otorhinolaryngology. Evaluation of nasal endoscopy data, X-ray results and computed tomography of the paranasal sinuses in patients with acute and chronic nasal diseases.

Topic 10 Acute and chronic diseases of the paranasal sinuses.

Acute and chronic sinusitis - pathological changes, classification. General and local symptoms. Additional research methods: radiography, CT, MRI, thermography and others. Treatment - conservative and surgical. Age features of development of paranasal cavities, their value in pathology of ENT organs at children. Relationship of the maxillary sinus with the development of the dental system. Indications for operations on the paranasal sinuses in children. Evaluation of nasal endoscopy data, X-ray results and computed tomography of the paranasal sinuses in patients with acute and chronic diseases of the paranasal sinuses.

Topic 11 Rhinogenic orbital and intracranial complications of sinusitis.

Rhinogenic orbital complications. Reactive edema of the orbital tissue and eyelids, osteoperiostitis of the orbit, subperiosteal and retrobulbar abscesses, phlegmon of the orbit. Rhinogenic intracranial complications. Ways of infection penetration into the cranial cavity. Extradural and subdural abscesses, meningitis, thrombosis of the cavernous and upper longitudinal sinuses. Clinic of rhinogenic orbital and intracranial complications, principles of treatment. Evaluation of the results of X-ray examination, CT and MRI of the paranasal sinuses and brain in patients with complicated sinusitis.

Topic 12 Acute diseases of the pharynx.

Acute pharyngitis, clinic, treatment. Acute primary tonsillitis: catarrhal, follicular, lacunar, ulcerative-membranous tonsillitis. Differential diagnosis. General principles of examination, treatment and prevention of primary tonsillitis. Features of the course and complications of sore throats in childhood. Acute secondary tonsillitis: lesions of the tonsils in infectious diseases (diphtheria, scarlet fever, tularemia, typhoid fever) and in diseases of the blood system (infectious mononucleosis, agranulocytosis, alimentary-toxic aleukemia, leukemia). Characteristic changes in the blood formula. Methods of treatment.

Topic 13 Complications of acute tonsillitis.

Complications of acute tonsillitis. Paratonsillitis, paratonsillar abscess, lateropharyngeal abscess, intra-tonsillar abscess, adenophlegmon, diffuse phlegmon of the neck, tonsillogenic sepsis. Abscessonselectomy. Pharyngeal abscess.

Topic 14 Chronic diseases of the pharynx.

Chronic pharyngitis and its forms. The choice of treatment depending on the form of the disease. Leptotrichosis. Chronic tonsillitis: etiology, pathogenesis, diagnosis. Classification of chronic tonsillitis. Local signs. Types of decompensation. Examples of diagnosis formulation. Conservative methods of treatment. Indications for surgical treatment. Tonsillectomy. Hypertrophy of the pharyngeal, palatine and lingual tonsils, adenoiditis. Principles of treatment (conservative and surgical). Indications and contraindications to tonsillotomy, adenotomy. Work in the "Simulation Center": the use of models and models, technical means (movies, videos, etc.), solving situational problems.

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| Topic 15 Acute and chronic diseases of the larynx.<br>Acute catarrhal laryngitis. Laryngeal sore throat, phlegmonous laryngitis, epiglottis abscess, chondroperichondritis of the larynx. Acute laryngotracheitis in children: etiology, pathogenesis, clinical classification, clinic, principles of treatment, prolonged nasotracheal intubation. Laryngeal diphtheria. Chronic laryngitis: catarrhal, hypertrophic, atrophic. Varieties of limited forms of hyperplastic laryngitis. Etiological factors of hypertrophic laryngitis, variants of the disease (hyperkeratosis, pachydermia, Reinke's edema), clinical manifestations, possible complications. Precancerous diseases of the larynx. Use of microsurgical diagnostics. Principles of conservative and surgical treatment. Microsurgical interventions in the laryngeal cavity. Occupational diseases of the larynx and their prevention. |
| **Module 4. Emergency care for diseases of ENT-organs.** |
| Topic 16 Nasal injuries, nosebleeds.<br>Diagnosis of injuries of the nose and paranasal sinuses (palpation, examination, radiography of the nasal bones in direct and lateral projections). Classification of nasal injuries. First aid for injuries. Local and general causes of nosebleeds. Local and general means of stopping nosebleeds. Technique of anterior and posterior nasal tamponade. Methods of stopping bleeding from the Kiselbach zone (cauterization of mucous vessels, surgical stopping of nasal bleeding). Bleeding from the lattice labyrinth, methods of stopping them. |
| Topic 17 Foreign bodies of ENT organs.<br>Varieties of foreign bodies of the ear, symptoms, features of removal. The mechanism of aspiration of foreign bodies into the respiratory tract. Age aspects. Features of the clinic with foreign bodies of the larynx and trachea, methods of their removal. Clinic of bronchial foreign bodies. X-ray examination of the patient. The Holzknecht-Jacobson phenomenon. Methods of diagnosis and removal. Symptoms and complications of foreign bodies of the pharynx and esophagus. Clinic. Stages of examination of a patient with suspected foreign body of the pharynx and esophagus. X-ray and ultrasound research methods. Lateral radiography of the neck. |
| Topic 18 Differentiated offset<br>Differentiated offset |

## 5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

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| LO1 | Acquire the skills of interviewing and objective examination of the patient. Justify and apply clinical methods to understand the manifestations of the disease in otorhinolaryngology. |
| LO2 | Carry out differential diagnosis of ENT diseases, formulate a clinical diagnosis based on evaluation of the results of laboratory and instrumental research methods. |
| LO3 | Diagnose emergencies in otorhinolaryngology. |
| LO4 | Determine the tactics of emergency medical care. |
| LO5 | Be able to determine the tactics of management of patients with various pathological conditions in otorhinolaryngology . |

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| LO6 | To master the main classes of pharmacological drugs used in the practice of an otolaryngologist, to apply appropriate clinical and pharmacological principles for the management of patients, to calculate the doses of drugs for children. |
| LO7 | Process state, social and medical information. |

## 7. Teaching and learning activities

7.1 Types of training

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| **Topic 1. Endoscopic methods of ENT organs examination.** |
| pr.tr.1 "Endoscopic methods of ENT organs examination." (full-time course)<br>Mastering the use of a frontal reflector. Acquisition of practical skills: rhinoscopy, oropharyngoscopy, otoscopy, laryngoscopy, examination of the patency of the ear canal. Endoscopic methods of examination of the nose, pharynx, larynx, trachea, bronchi, esophagus. The study of this topic involves theoretical work in the classroom, work in the simulation center (mastering the use of a frontal reflector, rhinoscopy, oropharyngoscopy, otoscopy, laryngoscopy, examination of the patency of the ear canal; use of models and models), technical means, video (etc.) virtual simulation (watching movies) followed by discussion. In the absence of quarantine restrictions, work in a medical institution with medical equipment of the hospital using an endoscopic rack (according to the agreement on cooperation between the medical institution and the university). |
| **Topic 2. Clinical anatomy, physiology and methods of examination of the outer, middle and inner ear. Methods of research of auditory and vestibular analyzers.** |
| pr.tr.2 "Clinical anatomy, physiology and methods of examination of the outer, middle and inner ear. Methods of research of auditory and vestibular analyzers." (full-time course)<br>Clinical anatomy of the outer ear. The structure of the eardrum. The system of the cavities of the middle ear, the walls of the tympanic cavity, its contents. Types of structure of the mammary process. Bone sound conduction. Theories of sound conduction and sound perception. Clinical anatomy of the inner ear. Conditioned-reflex methods of hearing research in children. Adequate stimuli of the ampullary and otolithic apparatus. The value of age features of the outer and middle ear in the pathology of childhood. Study of auditory function. Objective methods of hearing research. Interpretation of the main types of threshold audiograms, differential diagnosis of sound conduction lesions and sound perception. The study of this topic involves theoretical work in the classroom, work in the simulation center (otoscopy, tympanometry, audiometry, study of the patency of the ear canal, the use of models and models), the use of virtual simulation (watching movies) with further discussion. In the absence of quarantine restrictions, work in a medical institution with medical equipment of the hospital (according to the agreement on cooperation between the medical institution and the university). |
| **Topic 3. Clinical anatomy, physiology and methods of examination of the nasal cavity, pharynx, larynx, trachea, bronchi, esophagus.** |

pr.tr.3 "Clinical anatomy, physiology and methods of examination of the nasal cavity, pharynx, larynx, trachea, bronchi, esophagus."

The structure of the outer nose. The nasal cavity, the structure of its walls. Functional departments of the nasal cavity. Clinical and topographic relations of the lattice labyrinth, maxillary, frontal, wedge-shaped sinuses and surrounding anatomical formations. Features of the structure of the nasal system in childhood. Methods of research of a nasal cavity and paranasal sinuses. Structure and functions of the lymphadenoid pharyngeal ring. Topography of the larynx. The value of age features of the anatomy of the pharynx and larynx in the pathology of childhood. The structure of the trachea, the structure of the bronchi, esophagus. The study of this topic involves theoretical work in the classroom, work in the simulation center (rhinoscopy, oropharyngoscopy, indirect laryngoscopy, use of models and models), solving situational problems, the use of virtual simulation (watching movies) with further discussion. Working with radiographs and computed tomograms of the paranasal sinuses. In the absence of quarantine restrictions, work in a medical institution with medical equipment of the hospital (according to the agreement on cooperation between the medical institution and the university).

**Topic 4. Diseases of the outer ear.**

pr.tr.4 "Diseases of the outer ear." (full-time course)

Otitis externa (boil, diffuse inflammation of the external auditory canal), otomycosis, erythema, perichondritis, eczema, otohematoma, sulfur plug. Etiology, pathogenesis, clinical symptoms, methods of treatment of diseases of the outer ear. Work in the "Simulation Center": the use of models and models, technical means (movies, videos, etc.), solving situational problems. Work in a medical institution with hospital medical equipment (according to the agreement on cooperation between the medical institution and the university). Methods of removing the sulfur plug and foreign bodies of the ear.

**Topic 5. Diseases of the middle ear. Acute purulent otitis. Mastoiditis. Anthromastoidotomy.**

pr.tr.5 "Diseases of the middle ear. Acute purulent otitis. Mastoiditis. Anthromastoidotomy." (full-time course)

Ways of infection in the middle ear. Stages of acute purulent otitis media, clinic, diagnosis. Justification of the diagnosis, the choice of rational treatment tactics depending on the stage of the disease. Features of the course of acute purulent otitis media in infectious diseases and in childhood. Mastoiditis. Differential diagnosis of acute purulent otitis media, mastoiditis with otitis externa. Principles of treatment (conservative and surgical) depending on the stage of mastoiditis. The study of this topic involves theoretical work in the classroom, work in the simulation center (evaluation of otoscopy, audiometry and tympanometry), the use of models and models, technical means (movies, videos, etc.), solving situational problems with further discussion. Interpretation of the results of laboratory and instrumental methods of examination (audiometry and tympanometry in patients with acute otitis media. Radiography of the temporal bones according to Schuller, CT and MRI examination of the ear.), Treatment plan. Work with patients using hospital medical equipment (according to the agreement on cooperation between the medical institution and the university).

**Topic 6. Chronic purulent otitis media, labyrinthitis. Sanitizing and hearing restoration operations of the ear.**

pr.tr.6 "Chronic purulent otitis media, labyrinthitis. Sanitizing and hearing restoration operations of the ear." (full-time course)

The role of diseases of the upper respiratory tract, the immunological state of the body and allergic factors in the genesis of chronic purulent otitis media. Mesothympanitis and epitympanitis, cholesteatoma, differential diagnosis. Basic principles of treatment. Indications for radical ear surgery, its stages. Labyrinthitis. Clinical forms (limited, diffuse, serous, purulent, necrotic labyrinthitis), diagnosis and treatment. The study of this topic involves theoretical work in the classroom, work in the simulation center (evaluation of otoscopy, audiometry and tympanometry), the use of models and models, technical means (movies, videos, etc.), solving situational problems with further discussion. Interpretation of the results of laboratory and instrumental methods of examination (audiometry and tympanometry in patients with chronic otitis media. Schuller radiography of the temporal bones, CT and MRI examination of the ear), treatment plan. Work with patients using hospital medical equipment (according to the agreement on cooperation between the medical institution and the university).

**Topic 7. Non-purulent ear diseases. Intracranial complications.**

pr.tr.7 "Non-purulent ear diseases. Intracranial complications." (full-time course)

Acute and chronic catarrh of the middle ear, exudative otitis media. Methods of conservative and surgical treatment: tympanopuncture, myringotomy, shunting of the tympanic cavity. Sensorineural hearing loss - etiological classification, pathogenesis, comprehensive diagnosis, acumetric data, modern methods of conservative treatment. Prevention of auditory nerve diseases. Otosclerosis - pathomorphological changes in the temporal bone, clinical symptoms, acumetry and vestibulometry data. Principles of conservative and surgical treatment. Stapedectomy and stapedoplasty. Meniere's disease. Prevention of hearing disorders. The value of deaf centers in the medical examination of patients with ear diseases. Intracranial complications of middle and inner ear diseases. The study of this topic involves theoretical work in the classroom, work in the simulation center (evaluation of otoscopy, audiometry and tympanometry), the use of models and models, technical means (movies, videos, etc.), solving situational problems with further discussion. Interpretation of the results of laboratory and instrumental methods of examination (audiometry and tympanometry in patients with non-purulent ear diseases, CT and MRI examination of the ear), treatment plan. Work with patients using hospital medical equipment (according to the agreement on cooperation between the medical institution and the university).

**Topic 8. Acute diseases of the nose.**

pr.tr.8 "Acute diseases of the nose." (full-time course)

Deformation of the outer nose and nasal septum. Rhinoplasty. Sycosis, eczema, erysipelas, rhinophyma, boils and carbuncles of the nose, possible complications. Acute rhinitis. Differential diagnosis of acute rhinitis, influenza, acute respiratory viral infection. Features of the clinical course of acute rhinitis in infants. Modern methods of treating diseases of the nose. Features of treatment of nasal diseases in childhood. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (watching movies), solving situational problems with further discussion. In addition, the study of this topic provides for the acquisition of practical skills of rhinoscopy of patients in the specialized department of the medical institution (according to the agreement on cooperation between the medical institution and the university). Evaluation of nasal endoscopy data, X-ray results and computed tomography of the paranasal sinuses in patients with acute nasal diseases.

**Topic 9. Chronic diseases of the nose.**

pr.tr.9 "Chronic diseases of the nose." (full-time course)

The main forms of chronic rhinitis (catarrhal, hypertrophic, atrophic, vasomotor), clinic, diagnosis, treatment. Ozen, etiology, pathogenesis, clinic, methods of treatment. Allergic rhinitis. Seasonal allergic rhinitis (polyposis, hay fever). Year-round allergic rhinitis. Allergy diagnostics in otorhinolaryngology. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (watching movies), solving situational problems with further discussion. In addition, the study of this topic provides for the acquisition of practical skills of rhinoscopy of patients in a medical institution (according to the agreement on cooperation between the medical institution and the university). Evaluation of nasal endoscopy data, X-ray results and computed tomography of the paranasal sinuses in patients with chronic nasal diseases.

**Topic 10. Acute and chronic diseases of the paranasal sinuses.**

pr.tr.10 "Acute and chronic diseases of the paranasal sinuses."

Acute and chronic sinusitis - pathological changes, classification. General and local symptoms. Additional research methods: radiography, CT, MRI, thermography and others. Treatment - conservative and surgical. Age features of development of paranasal cavities, their value in pathology of ENT organs at children. Relationship of the maxillary sinus with the development of the dental system. Indications for operations on the paranasal sinuses in children. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (watching movies), role-playing games, solving situational problems with further discussion. In addition, the study of this topic provides for the acquisition of practical skills of rhinoscopy of patients in a medical institution (according to the agreement on cooperation between the medical institution and the university). Evaluation of nasal endoscopy data, X-ray results and computed tomography of the paranasal sinuses in patients with acute and chronic diseases of the paranasal sinuses. Work with hospital medical equipment. Evaluation of nasal endoscopy data, X-ray results and computed tomography of the paranasal sinuses in patients with acute and chronic diseases of the paranasal sinuses.

**Topic 11. Rhinogenic orbital and intracranial complications of sinusitis.**

pr.tr.11 "Rhinogenic orbital and intracranial complications of sinusitis."

Rhinogenic orbital and intracranial complications of sinusitis. Rhinogenic orbital complications. Reactive edema of the orbital tissue and eyelids, osteoperiostitis of the orbit, subperiosteal and retrobulbar abscesses, phlegmon of the orbit. Rhinogenic intracranial complications. Ways of infection penetration into the cranial cavity. Extradural and subdural abscesses, meningitis, thrombosis of the cavernous and upper longitudinal sinuses. Clinic of rhinogenic orbital and intracranial complications, principles of treatment. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (watching movies), solving situational problems with further discussion. Evaluation of nasal endoscopy data, X-ray results and computed tomography of the paranasal sinuses in patients with complicated sinusitis. Work with medical equipment of the hospital (according to the agreement on cooperation between the medical institution and the university). Evaluation of nasal endoscopy data, X-ray results and computed tomography of the paranasal sinuses in patients with complicated sinusitis.

**Topic 12. Acute diseases of the pharynx.**

pr.tr.12 "Acute diseases of the pharynx." (full-time course)

Acute pharyngitis, clinic, treatment. Acute primary tonsillitis: catarrhal, follicular, lacunar, ulcerative-membranous tonsillitis. Differential diagnosis. General principles of examination, treatment and prevention of primary tonsillitis. Features of the course and complications of sore throats in childhood. Acute secondary tonsillitis: lesions of the tonsils in infectious diseases (diphtheria, scarlet fever, tularemia, typhoid fever) and in diseases of the blood system (infectious mononucleosis, agranulocytosis, alimentary-toxic aleukemia, leukemia). Characteristic changes in the blood formula. Methods of treatment. The study of this topic involves theoretical work in the classroom, work in a simulation center (evaluation of pharyngoscopy data), the use of models and models, technical means (movies, videos, etc.), role-playing games, solving situational problems with further discussion. Interpretation of the results of laboratory and instrumental methods of examination (endoscopy of the nasopharynx, the results of bac. Sowing of tonsils on the microflora in patients with acute pharyngeal diseases), preparation of a treatment plan. Work with patients using hospital medical equipment (according to the agreement on cooperation between the medical institution and the university). Evaluation of pharyngoscopy data in patients with acute pharyngeal diseases.

**Topic 13. Complications of acute tonsillitis.**

pr.tr.13 "Complications of acute tonsillitis." (full-time course)

Complications of acute tonsillitis. Paratonsillitis, paratonsillar abscess, lateropharyngeal abscess, intra-tonsillar abscess, adenophlegmon, diffuse phlegmon of the neck, tonsillogenic sepsis. Abscessonselectomy. Pharyngeal abscess. The study of this topic involves theoretical work in the classroom, work in the simulation center (evaluation of pharyngoscopy data), the use of models and models, technical means (movies, videos, etc.), solving situational problems with further discussion. Interpretation of the results of laboratory and instrumental methods of examination (pharyngoscopy, radiography / CT of the neck and chest), treatment plan. Work with patients using hospital medical equipment (according to the agreement on cooperation between the medical institution and the university). Evaluation of pharyngoscopy data in patients with acute pharyngeal diseases.

**Topic 14. Chronic diseases of the pharynx.**

pr.tr.14 "Chronic diseases of the pharynx." (full-time course)

Chronic pharyngitis and its forms. The choice of treatment depending on the form of the disease. Leptotrichosis. Chronic tonsillitis: etiology, pathogenesis, diagnosis. Classification of chronic tonsillitis. Local signs. Types of decompensation. Examples of diagnosis formulation. Conservative methods of treatment. Indications for surgical treatment. Tonsillectomy. Hypertrophy of the pharyngeal, palatine and lingual tonsils, adenoiditis. Principles of treatment (conservative and surgical). Indications and contraindications to tonsillotomy, adenotomy. The study of this topic involves theoretical work in the classroom, work in a simulation center (evaluation of pharyngoscopy data), the use of models and models, technical means (movies, videos, etc.), role-playing games, solving situational problems with further discussion. Interpretation of the results of laboratory and instrumental methods of examination (nasopharyngeal endoscopy, the results of bacterial culture of the tonsils on the microflora in patients with chronic diseases of the pharynx), treatment plan. Work with patients using hospital medical equipment (according to the agreement on cooperation between the medical institution and the university). Evaluation of pharyngoscopy data in patients with chronic pharyngeal diseases.

**Topic 15. Acute and chronic diseases of the larynx.**

pr.tr.15 "Acute and chronic diseases of the larynx." (full-time course)

Acute catarrhal laryngitis. Laryngeal sore throat, phlegmonous laryngitis, epiglottis abscess, chondroperichondritis of the larynx. Acute laryngotracheitis in children. Laryngeal diphtheria. Chronic laryngitis: catarrhal, hypertrophic, atrophic. Varieties of limited forms of hyperplastic laryngitis. Precancerous diseases of the larynx. Principles of conservative and surgical treatment. Microsurgical interventions in the laryngeal cavity. Occupational diseases of the larynx and their prevention. The study of this topic involves theoretical work in the classroom, the use of virtual simulation (watching movies), solving situational problems with further discussion. In addition, the study of this topic provides for the acquisition of practical skills of laryngoscopy of patients in a medical institution (according to the agreement on cooperation between the medical institution and the university). Evaluation of laryngoscopy data, results of X-ray examination and computed tomography of the neck and OGK in patients with acute and chronic laryngitis.

**Topic 16. Nasal injuries, nosebleeds.**

pr.tr.16 "Nasal injuries, nosebleeds. Foreign bodies of ENT organs." (full-time course)

Diagnosis of injuries of the nose and paranasal sinuses (palpation, examination, radiography of the nasal bones in direct and lateral projections). Classification of nasal injuries. First aid for injuries. Local and general causes of nosebleeds. Local and general means of stopping nosebleeds. Technique of anterior and posterior nasal tamponade. Methods of stopping bleeding from the Kiselbach zone (cauterization of mucous vessels, surgical stopping of nasal bleeding). Bleeding from the lattice labyrinth, methods of stopping them. Work in the simulation center (rhinoscopy, mastering the practical skills of anterior nasal tamponade), use of models and models, technical means (movies, videos, etc.), role-playing games, solving situational problems. Work with medical equipment of the hospital (according to the agreement on cooperation between the medical institution and the university).

**Topic 17. Foreign bodies of ENT organs.**

pr.tr.17 "Foreign bodies of ENT organs."

Varieties of foreign bodies of the ear, symptoms, features of removal. The mechanism of aspiration of foreign bodies into the respiratory tract. Age aspects. Features of the clinic with foreign bodies of the larynx and trachea, methods of their removal. Clinic of bronchial foreign bodies. X-ray examination of the patient. The Holzknecht-Jacobson phenomenon. Methods of diagnosis and removal. Symptoms and complications of foreign bodies of the pharynx and esophagus. Clinic. Stages of examination of a patient with suspected foreign body of the pharynx and esophagus. X-ray and ultrasound research methods. Lateral radiography of the neck. Work in the simulation center (rhinoscopy, mastering the practical skills of anterior nasal tamponade), use of models and models, technical means (movies, videos, etc.), role-playing games, solving situational problems. Work with medical equipment of the hospital (according to the agreement on cooperation between the medical institution and the university).

**Topic 18. Differentiated offset**

pr.tr.18 "Differentiated offset"

Differentiated offset

7.2 Learning activities

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| LA1 | Preparation for lectures. |

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| LA2 | Preparation for practical classes. |
| LA3 | Performing practical tasks. |
| LA4 | Discussion of clinical cases. |
| LA5 | Self-study |
| LA6 | Preparation of multimedia presentations. |
| LA7 | Preparation for current and final control. |

## 8. Teaching methods

Course involves learning through:

| | |
|---|---|
| TM1 | Interactive, problem lectures. |
| TM2 | Practical training. |
| TM3 | Brain storm. |
| TM4 | Practice-oriented learning. |
| TM5 | Case-based learning (CBL). Learning based on the analysis of a clinical case, situation. |
| TM6 | Role play. |
| TM7 | Team-based learning (TBL). |
| TM8 | Research-based learning (RBL). |
| TM9 | Think-pair-share. |
| TM10 | Educational discussion / debate. |

The discipline is taught using modern teaching methods (CBL, TBL, RBL), which not only promote the development of professional skills, but also stimulate creative and scientific activities and are aimed at training practice-oriented professionals. Practice-oriented training provides an opportunity for students to apply the theoretical knowledge and acquired practical skills in otorhinolaryngology while working with patients in the professional activities of the future doctor.

The discipline provides students with the following soft skills: GC 1. Ability to abstract thinking, analysis, and synthesis. GC 2. Ability to learn, master modern knowledge, and apply the knowledge in practice. GC 3. Knowledge and understanding of the subject area and professional activity comprehension. GC 4. Ability to adapt and act in a new situation. GC 5. Ability to make reasoned decisions; teamwork ability; interpersonal skills. GC 7. Ability to use information and communication technologies. GC 8. Determination and persistence on the tasks and commitments undertaken. GC 9. Ability to exercise one's rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human rights and freedoms.

## 9. Methods and criteria for assessment

9.1. Assessment criteria

| ECTS | Definition | National scale | Rating scale |
|---|---|---|---|

| | | | |
|---|---|---|---|
| | Outstanding performance without errors | 5 (Excellent) | 170 ≤ RD ≤ 200 |
| | Above the average standard but with minor errors | 4 (Good) | 140 ≤ RD < 169 |
| | Fair but with significant shortcomings | 3 (Satisfactory) | 120 ≤ RD < 139 |
| | Fail – some more work required before the credit can be awarded | 2 (Fail) | 0 ≤ RD < 119 |

9.2 Formative assessment

| | |
|---|---|
| FA1 | Interviews and oral comments of the teacher on his results. |
| FA2 | Testing |
| FA3 | Teacher's guidance in the process of performing practical tasks. |
| FA4 | Defense of an individual research project (presentation at a conference, competition of scientific works) |
| FA5 | Checking and evaluating written assignments. |
| FA6 | Solving clinical cases |
| FA7 | Peer assessment |

9.3 Summative assessment

| | |
|---|---|
| SA1 | Evaluation of written works, surveys, testing, solving a clinical case. |
| SA2 | Final control: differentiated test (according to the regulations). |
| SA3 | Defense of an individual research project (incentive activities, additional points) |

Form of assessment:

| **7 semester** | | **200 scores** |
|---|---|---|
| SA1. Evaluation of written works, surveys, testing, solving a clinical case. | | **120** |
| | | 120 |
| SA2. Final control: differentiated test (according to the regulations). | | **80** |
| | Test tasks | 32 |
| | Answers to theoretical questions and practical tasks. | 48 |

Form of assessment (special cases):

| **7 semester** | | **200 scores** |
|---|---|---|
| SA1. Evaluation of written works, surveys, testing, solving a clinical case. | | **120** |
| | In case of quarantine restrictions, practical classes are conducted remotely using the platforms Mix.sumdu.edu.ua, Zoom, Google meet. | 120 |
| SA2. Final control: differentiated test (according to the regulations). | | **80** |

| | | |
|---|---|---|
| | In case of quarantine restrictions, practical classes are conducted remotely using the platforms Mix.sumdu.edu.ua, Zoom, Google meet. | 80 |

When mastering the materials from the student's module, a maximum of 5 points is assigned for each practical lesson (the grade is set in the traditional 4-point grading system). The final score for the current activity is recognized as the arithmetic sum of the scores for each practical lesson and for individual work. The maximum number of points that a student can get in practical classes during the cycle - 120 points. The number of points of the student is calculated by the formula 120 multiplied by the arithmetic mean and divided by 5. The maximum number of points for the current educational activity of the student - 120. The student is allowed to make the final module control. scored at least 72 points. Compilation of the final module control (FMC) is carried out at the last practical lesson. The final score for FMC consists of a summary score for test tasks (maximum 32 points) and for checking the acquisition of theoretical and practical knowledge (maximum 48 points). FMC score is set in the traditional 4-point grading system with subsequent translation into points, with a score of "5" corresponds to 80 points, "4" - 64 points, "3" - 48 points, "2" - 0 points. FMC is credited to a student if he scored at least 48 out of 80 points. Incentive points are added to the assessment of the discipline for the implementation of an individual research project (defense of student academic work 12 points, presentation at the conference 5 points, poster presentation at the conference 4 points, abstracts 3 points). The total score in the discipline may not exceed 200 points.

## 10. Learning resources

10.1 Material and technical support

| | |
|---|---|
| MTS1 | Library funds, archive of radiographs, tympanograms, audiograms, computer tomograms, results of laboratory methods of inspection |
| MTS2 | Models (organisms and individual organs, technical installations and structures, etc). |
| MTS3 | Medical equipment (tympanometer, audiometer, endoscopic rack, etc.) |
| MTS4 | Computers, computer systems and networks. |
| MTS5 | Medical facilities / rooms and equipment (clinics, hospitals, etc.). |
| MTS6 | Information and communication systems. |
| MTS7 | Software (to support distance learning). |
| MTS8 | Multimedia, video and sound reproduction, projection equipment (video cameras, projectors, laptop screens) |

10.2 Information and methodical support

| **Essential Reading** | |
|---|---|
| 1 | https://mix.sumdu.edu.ua/study/course/5972 |
| **Supplemental Reading** | |
| 1 | Flint P.W., Haughey B.H., Lund V. et al. Cummings otolaryngology – head and neck surgery. Sixth edition. Elsevier saunders, 2015. 3208 p. |

| | |
|---|---|
| 2 | Desmond A.N., Bunni J. The Essential Clinical Handbook for ENT Surgery. BPP. Learning media, 2013. 125 p. |
| 3 | Results of the ultramicroscopic research of adenoid vegetations accompanied by the pathologies of nasal cavity and paranasal sinuses in adults / I.A. Plakhtiienko, Y.V. Smiianov, V.A. Smiianov, V.V. Savchenko. // Wiadomosci Lekarskie.– 2020. – LXXIII. – № 8, P.1626-1631. (Scopus) |
| 4 | Algorithm of adenoiditis treatment in adults, depending on the pharyngeal tonsil hypertrophy stage / Ye.V. Smiianov, V.A. Smiianov, I.A. Sniehirova, O.I. Smiianova // Wiadomosci Lekarskie. – 2018. – T. LXXI. – Nr 3, P. 564 – 568. (Scopus) |
| **Web-based and electronic resources** | |
| 1 | https://ips.ligazakon.net/document/MOZ9371 |

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