

Each discipline has a characteristic that in this form is provided to the student in the beginning of the training. This requirement is set in accordance with the Higher Education Act Art. 56. para. 1, "Teachers are obliged to develop and publish in an appropriate way and description the lecture course led by them, including titles and sequence of topics from the study content, recommended literature, way of forming the assessment and form of testing knowledge and skills.

### **1. Educational goals**

Training in ear, nose and throat diseases aims to provide basic knowledge and practical skills in graduates of medicine and dental medicine with a master's degree and prepare them for work in an outpatient setting. After completion of the course students must have acquired knowledge of:

1. Anatomy and Physiology of the Ears, Nose and Throat
2. Pathophysiology and clinical manifestation of diseases of these organs.
3. Performing a basic ENT examination.
4. Theoretical knowledge and practical skills in the treatment of the most common ENT diseases.
5. Theoretical knowledge and practical skills about the most common ENT emergencies.
6. To recognize the early manifestations of malignant diseases in ENT.

## 2. Learning content of the course

Discipline	Exams	Course duration			Credits
	Semester	Overall	Lectures	Practical	
Medicine (Bulgarian)	VII/VIII	90	45	45	4.2
Medicine (English)	VII/VIII	90	45	45	4.2
Dental Medicine (Bulgarian)	VII	30	15	15	1.8
Dental Medicine (English)	VII	30	15	15	1.8

## Topics for the lecture course in ENT for Medicine students

№	THEME	DURATION	DATE
1.	<p><b>1. <i>Conditions of the external ear.</i></b></p> <p>Developmental anomalies of the external ear. Impetigo of the external ear. Seborrheic dermatitis. Eczema of the ear. Frostbite of the external ear. Thermal injury of the external ear. Erysipelas of the external ear. Othematoma. Otomycosis. Foreign bodies in the external ear canal. Traumatic rupture of the tympanic membrane. Earwax. Exostosis of the external auditory canal. Perichondritis of the external ear. Tumors of the external ear.</p>	3h.	
2.	<p><b>2. <i>Conditions of the middle ear.</i></b></p> <p>Acute inflammation of the Eustachean tube /Otitis serosa acuta/. Otitis media with effusion /Otitis serosa chronica/. Acute otitis media. Acute otitis and infectious diseases. Acute otitis media in infants . Streptococcus mucosus otitis. Ear barotrauma. Facial nerve palsy. Acute mastoiditis.</p>	3h.	
3.	<p><b>3. <i>Chronic otitis media and specific infectious diseases of the middle ear.</i></b></p> <p>Mesotympanitis. Epitympanitis. Tuberculosis of the middle ear. Syphilitic otitis media. HIV-associated otitis. Tumors of the middle ear.</p>	3h.	
4.	<p><b>4. <i>Conditions of the inner ear.</i></b></p> <p>Inflammatory diseases of the inner ear. Labyrinthitis and</p>	3h.	

	<p>vestibular neuritis, Cochlear neuritis. Sudden hearing loss. Tinnitus. Presbycusis. Deafness. Herpes zoster oticus. Non-inflammatory diseases of the inner ear. Meniere's disease. Otosclerosis. Tumors of the internal auditory meatus /Statoacoustic neuroma/</p>		
5.	<p><b>5.Otogenic intracranial complications.</b></p> <p>Extradural abscess. Subdural abscess. Otogenic purulent meningitis. Otogenic arachnoiditis. Thrombophlebitis of the sigmoid sinus and otogenic sepsis,. Thrombophlebitis of the cavernous sinus. Otogenic brain abscess. Abscess of the cerebellum. Ageing and the auditory and vestibular system.</p>	3h.	
6.	<p><b>6.Conditions of the nose and paranasal sinuses.</b></p> <p>Deformities of the external nose. Deformities of the paranasal sinuses. Deviation of the nasal septum - septoplasty. Rhinophyma. Foreign bodies in the nose. Rhinitis sicca anterior. Epistaxis. Nasal bone fractures. Hematoma and abscess of the nasal septum. Tumors of the external nose.</p>	3h.	
7.	<p><b>7.Inflammatory diseases of the nose.</b></p> <p>Acute rhinitis in infants and young children. Furuncle of the nasal vestibule. Gonococcal rhinitis. Diphtheria of the nose. Chronic rhinitis – foreign body in the nose. Chronic rhinitis. Chronic atrophic rhinitis with fetor. Smell disorders.</p>	3h.	

<p><b>8.</b></p>	<p><b>8.Conditions of the paranasal sinuses.</b></p> <p>Inflammatory diseases of the paranasal sinuses. Acute sinusitis. Acute maxillary sinusitis. Acute ethmoiditis. Acute frontal sinusitis. Acute sphenoid sinusitis. Chronic sinusitis. Aerosinusitis. Surgical treatment of sinus diseases. Allergic rhinitis. Seasonal allergic rhinitis /Hay fever/. Non-seasonal allergic rhinitis. Vasomotor rhinitis. Nasal polyposis.</p>	<p><b>3h.</b></p>	
<p><b>9</b></p>	<p><b>9.Complications of the paranasal sinus diseases. Tumors of the paranasal sinuses.</b></p> <p>Orbital complications of sinusitis. Palpebral edema. Palpebral abscess. Orbital periostitis. Apex orbitae syndrome. Orbital cellulitis. Orbital abscess and phlegmon. Optic neuritis. Neoplasms of the nasal cavity and paranasal sinuses – benign and malignant.</p>	<p><b>3h.</b></p>	
<p><b>10</b></p>	<p><b>10Conditions of the oral cavity and tongue.</b></p> <p>Congenital anomalies /anomalies of the lips, mouth and palate clefts/. Inflammatory diseases of the lips and oral cavity - cheilitis, stomatitis. Catarrhal and purulent stomatitis. Necrotising ulcerative stomatitis. Gangrenous stomatitis. Noma of the mouth. Mycotic stomatitis. Chemical stomatitis. Oral manifestation of systemic and hematological diseases. Abscesses of the floor of the mouth and tongue. Submandibular phlegmon. Glossitis. Tumors of the oral cavity and tongue – benign and malignant.</p>	<p><b>3h.</b></p>	
<p><b>11</b></p>	<p><b>11Conditions of the salivary glands.</b></p> <p>Salivary secretion disorders. Salivary glands trauma.</p>		

	<p>Sialadenitis. sialolithiasis. Submandibular gland cysts. Acute and chronic inflammatory diseases of the salivary glands. Sialosis. Lymphomatosis and granulomatosis of the salivary and lacrimal glands – Miculicz disease. Tumors of the salivary glands – benign and malignant.</p>	<b>3h.</b>	
<b>12</b>	<p><b>12Conditions of the pharynx.</b></p> <p>Inflammatory diseases – acute nasopharyngitis, acute non-specific pharyngitis, chronic non-specific pharyngitis, herpetic lesions of the pharynx. Tonsillitis – Viral tonsillitis, Acute tonsillitis, Acute adenoiditis, Plaut-Vincent angina. Symptomatic tonsillitis. Chronic tonsillitis,. Adenoid vegetations. Tonsillar hypertrophy. Obstructive sleep apnea.</p>	<b>3h.</b>	
<b>13</b>	<p><b>13Conditions of the pharynx</b></p> <p>Complications of the inflammatory diseases of the pharynx – peritonsillary abscess, retropharyngeal abscess, parapharyngeal abscess. Pharyngeal trauma. Tumors of the pharynx – benign and malignant.</p>	<b>3h.</b>	
<b>14</b>	<p><b>14Conditions of the larynx, trachea and bronchi.</b></p> <p>Acute laryngitis. Croup. Acute epiglottitis. Laryngeal edema. Laryngeal abscess. Acute stenosing laryngotracheitis. Chronic laryngitis. Foreign bodies in the larynx. Laryngeal trauma. Acute laryngeal stenosis. Laryngeal dyspnea. Chronic laryngeal stenosis. Laryngeal paralysis. Acute and chronic tracheal stenosis. Foreign bodies in the trachea and bronchi</p>	<b>3h.</b>	

15	<p><b>15</b><i>Conditions of the larynx and esophagus.</i></p> <p>Benigna and malignant neoplasms of the larynx. Cervical metastasis. Chronic infectious and specific diseases of the upper respiratory tract – Respiratory scleroma, Tuberculosis, Syphilis. Professional diseases of the ENT. Conditions of the esophagus – Diverticulus, Spasm, Varices, Esophagitis and Reflux disease. Chemical trauma of the esophagus. Esophageal stricture. Foreign bodies in the esophagus</p>	3h.	
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### Practical exercise syllabus for ENT

#### Year IV Medicine

№	THEME	DURATION	DATE
1.	<p><i>Examination of the external ear</i></p> <p>Introductory speech. Anamnesis, Inspection, Palpation. Otoscopy. Position of the physician and the patient. Setup and instruments. Methods of examination in the ENT practice</p>	3h..	
2.	<p><i>Otoscopic examination of the healthy tympanic membrane</i></p> <p>Clinical anatomy of the middle ear. Anatomical landmarks of the tympanic membrane: mobility, position, color and integrity of the tympanic membrane, /central and peripheral perforations/. Examination of the eustachian</p>	3h.	

	tube /Politzer balloon test, Valsalva maneuver/.		
3.	<p><b><i>Otoscopic examination of tympanic membrane pathology</i></b></p> <p>Demonstration of patients with acute and chronic infection of the middle ear – cleaning of the discharge. Earwax removal. Clinical anatomy of the middle ear</p>	3h.	
4.	<p><b><i>Functional examination of hearing</i></b></p> <p>Physiology of hearing. Speech test, Tuning fork tests. Audiometry. Frequency spectrum of perception. Conductive and sensorineural hearing loss. Weber, Rinne, Schwabach and Gelle tests</p>	3h.	
5.	<p><b><i>Functional examination of the vestibular system</i></b></p> <p>Physiology of balance. Caloric reflex test, Barany rotation test. Pressure test. Fistula test. Demonstration of patients with balance disorders.</p>	3h.	
6.	<p><b><i>Examination of the nose</i></b></p> <p>Clinical anatomy of the nose. Respiratory and olfactory functions of the nose. Anterior, middle and posterior rhinoscopy. Nasal packing. Demonstration of patients with diseases of the nose.</p>	3h.	
7.	<p><b><i>Examination of the paranasal sinuses</i></b></p> <p>Clinical anatomy of paranasal sinuses. Anamnesis, Inspection, Palpation. Maxillary sinus puncture. Radiological examination of paranasal sinuses. Demonstration of patients with paranasal sinus pathology</p>	3h.	

8.	<p><b><i>Examination of oral cavity and pharynx</i></b></p> <p>Clinical anatomy and physiology of mouth and pharynx. Anamnesis, Inspection, Palpation. Examination of the pharynx and tonsils. Demonstration of patients with pathology of the mouth and pharynx.</p>	3h.	
9.	<p><b><i>Examination of the larynx</i></b></p> <p>Clinical anatomy and physiology of the larynx. Anamnesis, Inspection, Palpation. Indirect and direct laryngoscopy. Demonstration of patients with diseases of the larynx.</p>	3h.	
10.	<p><b><i>Examination of patients</i></b></p> <p>Bronchoscopy, Esophagoscopy, Foreign bodies in the esophagus and esophageal dilatation.</p>	3h.	
11	<p><b><i>Exercise XI to XIV: Examination of ENT patients</i></b></p> <p>Examination of patients in the ENT practice Methods of treatment in the ENT practice. Emergency ENT.</p>	3h.	

### 3. Prerequisites

To start and successfully complete his studies, the student must possess knowledge of Anatomy, Physiology, Pathophysiology, Pathoanatomy, Propaedeutics of Internal Medicine, General Surgery, Neurology.

### 4. Academic resources

The academic staff of the Department of Ear, Nose and Throat Diseases consists of minimum 3 habilitated members and minimum 6 non-habilitated members. As a rule, lectures are presented by a habilitated lecturer. The practical exercises are led by non-habilitated lecturers.

### **5. Material resources**

The Department of ENT at MU Plovdiv carries out its activities in the facilities of the university hospitals in Plovdiv. Lectures are held in the auditoriums of university hospitals. The practical exercises are held in classrooms with the equipment for multimedia presentations and workstations for mastering the examination methods and the most common manipulations in ENT. Annually on the information boards of the university hospitals and on the website of Department of ENT diseases information about the exact location for the practical exercises for each group is presented.

### **6. Lectures**

The habilitated academic staff members present the lectures in the form of multimedia presentations. Lecture materials are not provided to students in electronic format.

### **7. Laboratory exercises**

No laboratory diseases are scheduled for the ENT diseases course.

### **8. Practical exercises:**

The seminars on ear, nose and throat diseases are held with a whole group. It is recommended that students are familiar with the topic in advance based on the information from the lecture course and the previously recommended literature and on-line sources. In the course of the exercises the assistant is responsible for:

1. Presenting clinical cases and demonstrating techniques and methods of examination and treatment.

2. Helping students master the basic examination methods.
3. Explaining topics of interest to students.
4. Regularly monitoring the theoretical knowledge of students through oral questions or tests.
5. Assigning group or individual tasks such as: presentation of topics or clinical cases, references or reviews.
6. The topics may change if there are interesting or rare cases on other topics present.
7. Writing control coupons on which he reflects the attendance of students and marks the results of the ongoing control of their knowledge.

#### **9. Information resources. Basic literature. Sites**

- Literature in Bulgarian:

1. Ivan Tsenev Emil Tsenev. PRACTICAL GUIDE TO OTORHINOLARYNGOLOGY 2010.
2. Dicho Dimov, Georgi Georgiev EAR NOSE AND THROAT DISEASES 1998
3. Vladimir Pavlov Guide for practical exercises in the ear nose and throat diseases 1979

- Literature in English:

1. Rudolf Probst, Gerhard Grevers, Heinrich Iro Basic Otorhinolaryngology A Step-by-Step Learning Guide 2006
2. Tony R Bull Color Atlas of ENT diagnosis 2009

- Online sources:

1. [www.entusa.com](http://www.entusa.com)
2. <http://www.aafp.org/>
3. <http://www.medscape.com/>

## **10. Control works**

Students work dynamically and intensively during the semester. Assistant professors monitor students' progress at least twice a semester. Ongoing control can be performed through tests or control assignments. Students are provided with information and explanations of the results of ongoing control in a timely manner in order to support their further preparation. In case the average grade of the ongoing control for a student is lower than Average (3), additional evaluation of their theoretical and practical skills must be conducted. If, however, the final grade is below Average (3) the Assistant professor does not certify the academic semester.

## **11. Individual work and commitment of the student**

The individual work is supervised by the Assistant professor, who advises the student about the recommended literature and methods. Providing training tests, including online, for individual exercises of students is recommended.

## **12. Cooperation between students and teaching staff**

This cooperation should be expressed in:

- Commitment of the teacher to the student and his preliminary preparation, providing help overcoming difficulties and creating opportunities to achieve better results with individual learning program.
- Use of reception hours for consultations.
- Organizing workshops.
- Involvement of students in teams for research tasks, research, projects, etc.

### **13. Exams**

The work of the students is evaluated during the semester and finally during the exam session.

1. Current grades required for in the curriculum of the specialty are earned for:

a) The student 's results in seminars, coursework and individual tasks, work of the student with the lecturer in scientific research and projects, etc .;

b) At least two (one in the middle and one at the end of the semester) control written or oral works or presentations.

2. The ENT examination shall be held during the examination session. For the specialty Medicine it includes a test, a practical exam and an oral exam. For the specialty dental medicine - test and oral exam. To be eligible to proceed to the oral exam, the student must have passed the test with 60% correct answers, passed the practical exam with a grade not lower than Good (4.50). During the oral exam, a representative of each group of students draws an exam ticket with a topic from the syllabus. During the oral exam, the examiners may ask additional questions outside the topic of the exam ticket.

14. Grading standards:

The standards for assessing student achievement are the following:

- Excellent (6) – awarded for good use of the information sources, mastering of the key and additional knowledge and skills, excellent understanding of the subject matter, ability for solving complex problems by using independent thinking and reasoning.
- Good (5) – for mastering of the key and additional knowledge, correct understanding of the subject matter, ability for practical application of what has been learned in complex case tasks.

- Satisfying (4) - for mastering of the key and additional knowledge and using it for solving cases and

tasks, but without being able to develop independent thinking.

- Sufficient (3) - for acquired key knowledge and ability to solve simple problems.

- Unsatisfactory (2) - does not meet any of the above requirements.

At the beginning of the training students should be familiar with the standards for evaluation, the procedures for conducting ongoing control and the possibilities for obtaining feedback on their progress during the semester.

### **15. Formation of the final assessment**

The final grade determines the extent to which the student has achieved the goal of the training, set at the beginning. It is based on the following chain:

1. in order to take an ENT exam, the student must have an ongoing assessment not lower than Sufficient (3),
2. During the exam you must successfully pass a test with more than 60% correct answers,
3. to pass a practical exam with a score not lower than Good (4.50)
4. The students, who have passed the oral exam are awarded their final grade, based on the demonstrated level of knowledge during the interview with the examiner.

After the day of the ENT exam, the control coupons from the semester training, test results and practical exam are stored in the Department of ENT diseases for a period not exceeding 5 working days after the date of the examination. Students have the right to access and get acquainted with the stored documents, as well as to receive a copy of them after an application submitted to the Head of the Department.

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