OTORHINOLARYNGOLOGY WITH AUDIOLOGY AND PHONIATRICS	
GENERAL INFORMATION	
Course coordinator	Professor Andrijana Včeva, MD, PhD
Assistant/Associate	Asst. Prof. Josip Maleš, MD, PhD Asst. Prof. Željko Zubčić, MD, PhD Asst. Prof. Hrvoje Mihalj, MD, PhD Anamarija Šestak, MD, PhD Ivan Abičić, MD Vjeran Bogović, MD Tin Prpić, MD Stjepan Grga Milanković, MD Željka Laksar Klarić, MD Mirjana Grebenar Čerkez, MD
Study Programme	Integrated undergraduate and graduate university study of Medicine
Status of the course	Mandatory
Year of study, semester	5th year, 10th semester
ECTS	**4**
Workload (hours)	Lectures (40); Exercises (30)
Expected number of students	70
COURSE DESCRIPTION	
Course objectives	
Training the students to be able to understand etiopathogenesis, identifying the clinical features, acquiring diagnostic procedures and therapy for otorhinolaryngological and other illnesses of the head and neck.	
Enrolment requirements and entry competencies	
Equal to the requirements for enrolling to year 5 of this study programme.	
Learning outcomes at the Programme level	
1.1, 1.2, 2.2, 2.3, 3.1, 3.2, 3.4, 3.5, 4.2	
Learning outcomes (5-10)	
1. Interpreting the anatomical relationships and the physiological processes in the ear, nose, throat, and neck 2. Examining the causes for the appearance of otorhinolaryngological illnesses 3. Determining the symptoms and signs of the most common otorhinolaryngological illnesses 4. Choosing the option among diagnostic and therapeutic procedures 5. Adopting basic skills and independently performing a clinical otorhinolaryngological examination, diagnostic procedures, and otorhinolaryngological interventions	
Course content	
Lectures: **P-1** Introductory lecture. Head and neck injuries. Auricle and ear canal injuries. Mechanical auricle injuries. Othematoma. Frozen auricles. Auricle burns. Ear canal injuries. Tympanic membrane injuries. Ear barotrauma. Horizontal and vertical fracture of the temporal bone pyramid. Nose injuries. Nasal septum haematoma. Fractures in nasal bones. Children's nose injuries. Upper jaw fracture. Zygomatic bone and eye socket skeleton fracture. Isolated fracture of the bottom of the eye socket. Frontobasal fractures. Injuries of the soft tissue of the face. Lower jaw injuries. Closed	

and open neck injuries. Neck burns. Open and closed larynx injuries. Chemical injuries and larynx burns. Iatrogenic larynx injuries. Emergency conditions in otorhinolaryngology (ORL). Nosebleeds: local and general causes, treatment – first aid and local procedures. Acute subglottic and supraglottic laryngitis. Foreign bodies in airways: nose, throat, trachea, bronchi. Foreign bodies in the oesophagus. Oedema glottidis. Tracheotomy and cricothyrotomy. Larynx and trachea stenoses.

P-2 Acute and chronic inflammations of the outer and middle ear, otogenic complications. Auricle and outer ear canal inflammations. Non-specific outer ear inflammations. Specific outer ear inflammations: ear furuncle, bullous myringitis, otomycosis. Acute middle ear inflammations. Acute catarrh and acute suppurative inflammation of the middle ear. Acute haemorrhagic inflammation of the middle ear. Mucosal inflammation of the middle ear. Chronic middle ear inflammations. Chronic middle ear inflammation: simplex, osteitic, with a cholesteatoma. Surgical treatment of chronic middle ear inflammations. Closed and open techniques. Otogenic complications. Inner ear illnesses. Exocranial otogenic complications: acute mastoiditis, labyrinthitis, petrositis, facial nerve paresis. Endocranial otogenic complications: sigmoid sinus thrombophlebitis, meningitis, extradural abscess, subdural abscess, cerebral and cerebellar abscess. Otosclerosis. Meniere's disease. Viral labyrinthitis. Bacterial labyrinthitis. Auditory nerve neuroma. Vestibular neuritis. Cochlear hydrops. Sudden hearing damage. Noise injuries and acoustic injuries.

P-3 Anatomy and physiology of the auditory sense. Diagnostic tests of the auditory sense. Causes, diagnosis, and treatment of hearing loss. Causes of conductive hearing loss: congenital anomalies, acquired anomalies-inflammations, traumas, foreign bodies in the ear canal, cerumen. Causes of sensorineural hearing loss: congenital anomalies, perinatal disorders, acquired disorders. Causes of mixed hearing loss. Congenital abnormalities where impaired hearing exists at birth, where hearing loss is evident during childhood, acquired hearing loss. Non-organic, psychogenic hearing loss. Tests for reaching the diagnosis of conductive hearing loss. Tests for reaching the diagnosis of sensorineural hearing loss. Tests for reaching the diagnosis of central hearing loss. Treatment of hearing loss: surgical, hearing aid, artificial cochlea. Hearing and listening rehabilitation. Hearing loss caused by noise.

P-4 Anatomy and physiology of the vestibular sense: spatial perception, vestibular sense, vestibulo-ocular reflex arc, types of eye movements. Searching the vestibular sense. Balance testing using instruments. Testing basic activity: spontaneous nystagmus, eye movement testing, rotational testing, positional testing, caloric testing and nystagmus. Vestibular function disorder and vertigo treatments. Definition and features of vertigos.

P-5 Anatomy and physiology of the nose and sinuses; nose tests; congenital nose anomalies; nose skin inflammations; acute and chronic nose inflammations; telemedicine in ORL.

P-6 Acute and chronic rhinosinusitis. Sinusitis complications. Orbital complications. Periorbital cellulitis and abscess. Orbital cellulitis. Subperiosteal abscess. Orbital abscess. Endocranial complications: cavernous sinus thrombophlebitis, meningitis, epidural and subdural abscess, cerebral abscess. Frontal bone osteomyelitis. Upper jaw osteomyelitis. Benign tumours and pseudotumours of the nose and sinuses: hemangiomas, papillomas, osteomas, chondromas, fibrous dysplasia, rhinophyma. Malignant tumours of the nose: basaliomas, planocellular carcinoma, malignant melanoma. Malignant tumours of the nasal cavity and sinuses.

P-7 Saliva secretion. Functional salivary secretory disorders: hyposalivation, asalivation, hypersalivation. Salivary gland inflammation: viral, bacterial, radiation and electrolytic sialadenitis. Benign salivary gland tumours. Benign mixed tumour, Warthin tumour. Malignant salivary gland tumours. Malignant mixed tumour, adenocarcinoma, planocellular carcinoma, mucoepidermoid carcinoma, sarcoma. Rare salivary gland tumours: lymphangiomas, haemangiomas, ranula.

P-8 Anatomy of the oral cavity and the pharynx, lymphoid tissue of the pharynx and neck; the act of swallowing; medical history and tests of the oral cavity; congenital anomalies, acute and chronic

tonsillitis; tonsillitis complications; acute and chronic pharyngitis, tonsillar problems.

P-9 Anatomy and physiology of the larynx; larynx tests; congenital malformations of the larynx; inflammatory illnesses of the larynx.

P-10 Anatomy of the neck, neck testing; neck dissections; congenital neck malformations; neck inflammations.

P-11 Definition of snoring. Causes of snoring. Insufficient muscle tone of the soft palate, the tongue, and the pharynx wall. Masses in the pharynx. Extended and flabby soft palate. Obstructions to breathing through the nose. Sleep apnoea. Treatment for snoring.

P-12 Tumours of the oral cavity and the larynx.

P-13 Larynx tumours. Benign larynx tumours. Malignant larynx tumours. Supraglottic malignant larynx tumours. Glottic malignant larynx tumours. Subglottic malignant larynx tumours. Larynx tumour therapy. Surgical treatment of larynx tumours. Partial laryngectomies. Laryngofissure. Cordectomy. Vertical partial laryngectomy. Horizontal supraglottic laryngectomy. Total laryngectomy.

P-14 Neck dissection. Radical neck dissection. Modified radical neck dissection. Selective neck dissection. Extended radical neck dissection. Metastasis of an unknown primary tumour in the neck. Congenital tumours and neck cysts. Lateral neck tumours. Medial neck tumours. Tumours that cover the entire neck.

P-15 Illnesses and tumours of the thyroid gland. Hypothyroidism Hyperthyroidism. Acute inflammation of the thyroid gland. Subacute inflammation of the thyroid gland. Hashimoto's disease. Riedel struma. Graves-Basedow disease. Dysthyroid ophthalmopathy. Papillary thyroid carcinoma. Follicular thyroid carcinoma. Medullary thyroid carcinoma. Anaplastic thyroid carcinoma. Other malignant thyroid gland tumours. Surgical treatment of thyroid gland illnesses. Application of the MIVAT technique and the harmonic scalpel in thyroid gland surgery. Complications in surgical interventions.

P-16 Aesthetic surgery of the nose. Aesthetic surgery of the face and neck. Rhytidoplasty. Blepharoplasty. Mentoplasty. Liposuction. Dermabrasion. Simple and complex reconstruction. Primary closure. Skin graft of full and partial thickness. Flap: local, remote Flap: skin, fasciocutaneous, muscle, musculocutaneous, bone, osteocutaneous Flap: rotation, transposition, sliding, microvascular free Flap: random, axial, free

P-17 Congenital anomalies of the oesophagus: oesophageal atresia, short oesophagus, tracheoesophageal fistula. Oesophageal diverticulum. Corrosive damage to the oesophagus. Foreign bodies in the oesophagus. Oesophageal stenoses.

P-18 Anatomy and physiology of the speech system. Speech obstructions: developmental delay, speech of intellectually disabled persons, dysphasia, dyslalia, dysarthria, dysphemia, cluttering. Resonance disorders: hyperrhinophonia, hyporhinophonia, rhinolalia. Voice obstructions: voice creation mechanism. Dysphonia occurrence mechanism. Voice and speech function tests: laryngostroboscopy, aerodynamic phonation tests, acoustic voice analysis, ultra-rapid cinematography of the larynx, laryngeal electromyography. Primary organic changes on the vocal cords: chronic laryngitis, chronic diffuse vocal cord oedema, vocal cord carcinoma. Primary functional dysphonias: hyperkinetic and hypokinetic. Secondary organic changes on the vocal cords: vocal nodules, contact ulcer, ventricular fold hypertrophy. Developmental and hormonal dysphonias: dysplastic dysphonias, laryngeal diaphragm, spasmodic dysphonia. Paralytic dysphonias. Psychogenic dysphonias.

P-19 Tracheal stenoses. Foreign bodies in the airway. Tracheotomy, cricothyrotomy, intubation.

P-20 Hypertrophy of the lymphatic ring. Sinusitises in children. Congenital outer ear anomalies: protruding ear, preauricular fistula. Chronic secretory otitis. Hoarse voice in children.

P-21 Epidemiological features of head and neck tumours. Most common head and neck tumours.

Aetiology of head and neck tumours. Diagnostics of head and neck tumours: medical history, ORL examination, ultrasound, cytology, endoscopy, radiological workup– CT, NMR, PET-CT Staging system: TNM classification of head and neck tumours – clinical status, pathohistological results, autopsy results. Second primary tumour of the head and neck. Treatment of head and neck tumours: surgery, radiotherapy, surgery + radiotherapy, chemotherapy. Complications and quality of life for patients with head and neck tumours.

Exercises:

V-1 ORL medical history. ORL workplace and instruments: using a head mirror and indirect light, using a head mirror with a light source, using a fiber naso-pharyngo-laryngoscope, using a magnifying glass and an ear speculum, using an otoscope, physical examination of the face and jaw, mouth, and teeth, suturing wounds on the face, skin, and mucosa.

V-2 Medical history of an otology patient. Physical ear examinations: inspection and palpation of the auricle and the mastoid process, inspection and palpation of the retroauricular region, otoscopy of the ear canal and the tympanic membrane, ear hygiene, blowing, Valsalva manoeuvre, cleaning the ear canal with a cotton swab, removing a foreign body from the ear.

V-3 Otoscopy of the ear canal and the tympanic membrane, ear hygiene, testing hearing with a musical tuning fork (Rinne, Weber, and Swabach tests), whisper hearing test, subjective and objective methods for testing hearing, interpretation of pure tone audiometry, interpretation of speech audiometry, interpretation of a tympanogram and the acoustic reflex demonstration, OAE, ABR, ASSR. Medical history for vestibular sense damage. Specific features of an otoneurological examination. Balance tests, interpretation of VNG, VEMP, vHIT.

V-4 Patient history for rhinology patients. Physical nose testing – inspecting the outer nose, nasal pyramid palpation, estimation of nasal passability, anterior rhinoscopy, posterior rhinoscopy, nasopharynx examination, nose endoscopy, testing the sense of smell, measuring the mucociliary function, rhinomanometry, interpretation of the radiological images of the sinuses.

V-5 Anaesthesia of the nasal mucosa, stopping nose bleeds, anterior nasal tamponade, posterior nasal tamponade, extracting a foreign body from the nose, sinus puncture.

V-6 Medical history for mouth and pharynx illnesses. Examination of the oral cavity, testing the mobility of the tongue, palpation of the base of the oral cavity, the mobile tongue, and the base of the tongue, examination of the tonsils, the palate arches, and the palate, tonsil expression, peritonsillar abscess incision, extraoral and intraoral examination of the salivary glands, palpation of the salivary glands.

V-7 Laryngological history. Examinations of the larynx: larynx inspection, larynx palpation, indirect laryngoscopy, larynx examination with a flexible instrument, direct laryngoscopy.

V-8 Neck examinations: inspection and palpation of the neck, palpation of the lymph nodes in the neck, palpation of the thyroid gland, cytological puncture of a node on the neck, interpretation of radiological results: x-ray, CT, MR of the head and neck tumours.

V-9 Primary treatment of a wound, taking samples of suspect tissue, incision and drainage of an abscess, excision of smaller tumours.

V-10 ORL examination of children. Heteroanamnesis for children – examination of children's oral cavity, tonsils – children's otoscopy – hygiene and removal of a foreign body from the ear of a child – paracentesis and placing ventilation tubes, children's fiber naso-pharyngo-laryngoscopy.

Mode of teaching

Lectures; Clinical exercises

Student obligations

Attendance at all forms of academic presentation is mandatory and the student must attend all knowledge tests. A student may be absent from 30% of each of the forms of academic presentation if they have justification. Exercises which have not been done must be completed via an exam.

Monitoring student work *(alignment of learning outcomes, teaching methods, and grading)*

Teaching activity	ECTS	Learning outcome	Student activity	Assessment methods	Grade points	
					Min.	Max.
Lectures	0.5	1-4	Attending lectures	Records	5	10
Exercises	1.5	5	Attendance with active participation	Testing acquired skills	15	40
Final exam	2.0	1-5	Learning for the oral exam	Grading of oral exam	30	50
Total	**4**				**50**	**100**

Evaluation /grading of the final exam:

Student's response	Grade points
The response meets the minimum criteria	30.0
Average response with noticeable errors	37.0
Very good response with slight errors	44.0
Excellent response	50.0

Calculation of final grade:
Grade points acquired during classes will be added to the points acquired during the oral exam. Grading will be done through absolute distribution, i.e., on the basis of final achievement, and it will be compared to the numerical system in the following manner:
A – Excellent (5): 90.00-100.00 grade points;
B – Very Good (4): 75.00-89.99 grade points;
C – Good (3): 60.00-74.99 grade points;
D – Sufficient (2): 50.00-59.99 grade points;
E – Insufficient (1): 0-49.99 grade points.

Required reading (available in the library and through other media)

Title	Number of copies in the library	Availability through other media
1. Bumber Ž. i sur. Otorinolaringologija. Naklada Ljevak, Zagreb, 2011.	13	

Additional reading

1. Drviš et al. Otorinolaringologija i kirurgija glave i vrata. Redak, Split, 2019. 2. Probst R, Grebers G, Iro H. Basic Otorhinolaryngology. Thieme, 2006.
Course evaluation procedures
Anonymous, quantitative, standardized student survey providing feedback on the course as well as on the work of course coordinators and their assistants/associates is being conducted by the QA Office of the Faculty of medicine Osijek.
Note /Other
E-learning does not count towards course contact hours, but is being used in teaching and comprises links to various web pages, as well as video and audio materials available on web pages.