



ENT Module

4th Year MBBS

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Khyber Medical University (KMU) Vision:

Khyber Medical University will be the global leader in health sciences academics and research for efficient and compassionate health care.

Khyber Medical University (KMU) Mission:

Khyber Medical University aims to promote professional competence through learning and innovation for providing comprehensive quality health care to the nation.

Institute of Health Professions Education & Research (IHPER) Mission:

To produce leaders, innovators and researchers in health professions education who can apply global knowledge to resolve local issues.

Teaching Hours Allocation

Table 1: Themes & Hours Allocation

Themes	Total Hours	In class teaching (Hours)	Clinical (Hours)
Theme 01: Foundation of Otorhinolaryngology & Head and Neck	11	---	11
Theme 02: Sore Throat	21	15	06
Theme 03: Difficulty in Swallowing	09	05	04
Theme 04: Hoarseness & Stridor	36	19	17
Theme 05: Deafness, Ear Discharge & Dizziness	27	19	08
Theme 06: Nasal Obstruction	29	19	10
Theme 07: Swelling Neck	14	06	08
Total	147	83	64

Learning Objectives

By the end of ENT Module, 4th year MBBS students will be able to:

1. Describe the anatomy and physiology of Ear, Nose, Throat & Neck.
2. Obtain appropriate history, examine Ear, Nose, oral cavity, pharynx, larynx and Neck including mirror examinations and functional examinations of these areas.
3. Describe benign and malignant tumors involving the ENT and Head & Neck.
4. Assist in diagnostic procedures and take swab for culture and sensitivity from ear, Nose & throat under supervision.
5. Prescribe hematological investigations, x-ray paranasal sinuses, CT/MRI scan of paranasal sinuses, temporal bone and Head & Neck & interpret it.
6. Perform clinical tests of hearing, tuning fork tests and balance independently
7. Interpret pure tone audiogram & tympanogram.
8. Describe the ABC protocol for resuscitation of traumatic patients.
9. Discuss differential diagnosis of membrane on the tonsils and describe diphtheria.
10. Describe sialadenitis, sialolithiasis and enumerate the benign and malignant salivary tumors.
11. Discuss a treatment plan for the patients with various common diseases of the ENT and Head and Neck region.
12. Describe dysphagia and its causes, Plummer-Vinson Syndrome and malignant tumors of hypopharynx that could lead to dysphagia and hoarseness along with their management.
13. Describe the management of corrosive ingestion and foreign body in the esophagus.
14. Describe various congenital and acquired disorders of the ENT and Head & Neck region.

15. Describe the significance of hoarseness and stridor & enumerate their causes and clinical features of respiratory obstruction.
16. Differentiate clinically between various types of stridor and possible site of obstruction.
17. Describe tracheostomy and indications for this procedure.
18. Describe squamous cell carcinoma of the larynx and the impact of stage of disease on management and survival of patient.
19. Explain the mutual association of hearing and balance disorders & the various conditions that give rise to these disorders.
20. Describe the clinical features and course of otosclerosis, Meniere's disease, vestibular neuronitis & BPPV.
21. Diagnose suppurative otitis media & describe its intracranial and extra cranial complications.
22. Describe the 'rehabilitation of deaf and mute child' and the impact of hearing impairment in children.
23. Describe rhinosinusitis, its various types of rhino-sinusitis and its complications.
24. Describe the diseases of the nasal septum & define DNS and enumerate its various types.
25. Describe the pathophysiology, types, and management of Sino nasal polyposis.
26. Enumerate various conditions resulting in nasal obstruction & discharge.
27. Describe various types of allergic & non-allergic rhino-sinusitis.
28. Enumerate fungal and other granulomatous diseases of the nose & paranasal sinuses and describe their management.
29. Categorize various conditions benign & malignant neoplasms of the nose & paranasal sinuses.
30. Classify various types of neck swellings and describe clinical differentiating features of benign & malignant neck masses.

31. Describe a classification of various lymph nodes levels in the neck and describe the lymphatic drainage of the head and neck.
32. Obtain informed consent from patient and communicate with the patients, their families and community regarding diseases & its relevant issues.
33. Describe the anatomy and physiology of salivary glands
34. Describe benign & malignant diseases of the salivary glands

Theme I - Sore Throat

Table 1: Sore Throat

TOPIC	HOURS	LEARNING OBJECTIVES
Anatomy & physiology of oral cavity, Pharynx & salivary glands	2 hours	<ol style="list-style-type: none">1. Discuss the anatomy of oral cavity and site classification of oral cavity.2. Discuss applied anatomy of pharynx & mechanism of deglutition3. Discuss applied anatomy of nasopharynx and anatomy and physiology of adenoids4. Discuss applied anatomy of oropharynx and anatomy and physiology of pharyngeal tonsils5. Discuss the anatomy of minor and major salivary glands
Acute Pharyngitis	1 hour	<ol style="list-style-type: none">6. Discuss classification, types, aetiology, clinical features, diagnosis and treatment of acute pharyngitis
Chronic Pharyngitis	1 hour	<ol style="list-style-type: none">7. Discuss classification, types, aetiology, clinical features, diagnosis and treatment of chronic pharyngitis

Acute Tonsillitis/ Peritonsillar abscess (Quinsy)	1 hour	8. Discuss classification, types, aetiology, clinical features, diagnosis and treatment of acute tonsillitis 9. Discuss the aetiology, clinical features and treatment of quinsy
Chronic Tonsillitis	1 hour	10. Discuss classification, types, aetiology, clinical features, diagnosis and treatment of chronic tonsillitis
Oral ulceration	1 hours	11. Enumerate differential diagnosis of oral ulcers and discuss management of Aphthous ulcers
Trauma to the palate and Oropharynx	1 hour	12. Discuss the principles of soft tissue & bone repair in palatal and pharyngeal trauma.
Carcinoma of oral cavity	1 hour	13. Discuss the aetiology , clinical features and treatment of oral carcinoma
Approach to a patient with sore throat	1 hour	14. Enumerate differentials of sore throat and discuss important differentiating points
Anatomy & physiology of salivary glands	1 hour	15. Describe the anatomy & physiology of parotid, submandibular, sublingual & minor salivary glands
Non neoplastic disorders of the salivary glands	1 hour	16. Describe non neoplastic disorders of salivary glands, its management and treatment

Sialolithiasis and sialectasis	1 hour	17. Describe stone formation and stasis of secretions in the salivary glands and its management
Neoplasm of salivary glands	1 hour	18. Describe the features, course and management of benign and malignant, submandibular, sublingual and minor salivary glands
Complications of salivary gland surgeries	1 hour	19. Describe in detail different surgical procedures of salivary glands and its complications

Theme II - Difficulty in Swallowing

Table 2 : Difficulty in Swallowing

TOPIC	HOURS	LEARNING OBJECTIVES
Dysphagia & Plummer Vinson Syndrome	1 hour	20. Discuss Dysphagia & the anatomy and physiology of Esophagus and the appropriate medical and surgical treatment of dysphagia. 21. Discuss PVS & the predisposing factors for causation & management
Pharyngeal and esophageal Pouches	1 hour	22. Discuss Pharyngeal pouch & the predisposing factors, clinical features, and treatment.

Oropharyngeal Tumors	1 hour	23. Enumerate oropharyngeal tumors. Discuss the types, aetiology and treatment of oropharyngeal carcinoma.
Hypo pharyngeal Tumors	1 hour	24. Enumerate oropharyngeal tumors. Discuss the aetiology and treatment of hypo pharyngeal carcinoma.
Tumors of Esophagus.	1 hour	25. Classify esophageal tumors & describe the etiology, clinical features, and treatment options.

Theme III - Hoarseness & Stridor

Table 3 Hoarseness & Stridor

TOPIC	HOURS	LEARNING OBJECTIVES
Applied anatomy of potential spaces in & around the larynx and neck	2 hour	26. Discuss applied anatomy of larynx. 27. Discuss the pre-piglottic, paraglottic & Rinke's space.
Anatomy of Potential neck spaces	3 hour	28. Discuss anatomy of deep fascia of neck & anatomy of potential pharyngeal and neck spaces.

		<p>29. Discuss surgical anatomy of peritonsillar, parapharyngeal & submandibular spaces.</p> <p>30. Discuss anatomy of retro pharyngeal space.</p>
Applied anatomy & physiology of Larynx/neck , Voice physiology	2 hour	<p>31. Discuss applied anatomy of Larynx.</p> <p>32. Discuss the physiology of larynx.</p> <p>33. Discuss the physiology of voice, speech production & its regulation</p>
Acute Laryngitis	1 hour	34. Discuss aetiology, clinical features, diagnosis, and treatment of acute simple laryngitis
Chronic Laryngitis	1 hour	35. Discuss chronic laryngitis including chronic granulomatous conditions of the larynx, its clinical features, diagnosis, and treatment.
Vocal nodules & vocal polyps	1 hour	36. Discuss differentiating points between vocal nodules & polyps, its aetiology, clinical features, diagnosis, and treatment.
Vocal cord paralysis	1 hour	37. Discuss paralytic causes of hoarseness, its types, clinical features, diagnosis, and treatment.
Stridor	1 hours	38. Enumerate causes of stridor. Explain types of stridor. Discuss management of congenital stridor

Apyrexial causes of stridor	1 hour	39. Discuss the aetiology and management of acquired apyrexial causes of stridor
Pyrexial causes	1 hour	40. Discuss the aetiology and management of pyrexial causes of stridor
Laryngeal trauma	1 hour	41. Discuss the management of laryngeal trauma
Acute Respiratory obstruction	1 hour	42. Discuss signs of respiratory obstruction. Enumerate alternate airways & discuss tracheostomy.
Laryngotracheal Foreign body	1 hour	43. Discuss the aetiology, types & treatment of Laryngotracheal Foreign bodies.
Malignant Tumours of the Larynx / Carcinoma of Larynx	1 hour	44. Discuss incidence, epidemiology, risk factors, Pathology & classification of carcinoma larynx. 45. Discuss UICC classification of laryngeal sites & subsites. Discuss management of carcinoma of all the subsites
Approach to a patient with hoarseness	1hour	46. Discuss the differentials diagnosis of hoarseness and explain management approach to a patient presenting with hoarseness

Theme IV - Deafness, Ear Discharge & Dizziness

Table 4 Deafness, Ear Discharge & Dizziness

TOPIC	HOURS	LEARNING OBJECTIVES
Applied Anatomy and Physiology of Ear	2 hours	<p>47. Describe the applied anatomy of the external, middle & internal ear.</p> <p>48. Discuss the functions of the ear.</p> <p>49. Discuss basic principles & interpretation of various tuning fork tests.</p> <p>50. Discuss the interpretation of PTA & impedance audiometry</p>
Trauma to External Ear and the Temporal Bone	1 hour	<p>51. Classify the trauma to external ear and the temporal bone.</p> <p>52. Describe the appropriate imaging investigations & treatments.</p>
Otitis Externa	1 hour	<p>53. Discuss Otitis Externa, its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment.</p>
Acute Suppurative otitis media	1 hour	<p>54. Discuss acute suppurative otitis media.</p>

TOPIC	HOURS	LEARNING OBJECTIVES
		55. Describe its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment
Chronic Suppurative Otitis Media without chloesteatoma	1 hour	56. Discuss Chronic Suppurative Otitis Media and its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment.
Chronic Suppurative Otitis Media with Cholesteatoma	1 hour	57. Discuss cholesteatoma and its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment.
Complications of Suppurative Otitis Media.	1 hour	58. Discuss intracranial & extracranial otogenic complications and enumerate the appropriate clinical & radiological investigations and treatment.
Mastoiditis: Acute and Chronic	1 hour	59. Discuss mastoiditis, its clinical features, differential diagnosis and relevant clinical & radiological investigations and treatment.
Acoustic Neuroma	1 hour	60. Discuss acoustic neuroma & the appropriate clinical, audiological, and imaging studies used in diagnosis and treatment of acoustic neuroma.

TOPIC	HOURS	LEARNING OBJECTIVES
Approach to patient with a Conductive hearing loss	1 hour 1 hour hour	61. Discuss the differential diagnosis of hearing loss & the medical and surgical management of CHL. 62. Discuss otosclerosis & its medical & surgical treatment of otosclerosis. 63. Discuss OME & its medical and surgical treatment
Approach to patient with a Sensorinueral Hearing Loss(SNHL)	2 hours	64. Discuss SNHL & its differential diagnosis. 65. Discuss tinnitus & its management. 66. Discuss Ototoxicity & its management.
Vertigo Vestibular Neuronitis Meniere's Diseases BPPV	1 hour	67. Discuss true vertigo & its types, pathophysiology, investigations & management. 68. Discuss Meniere's disease & its treatment. 69. Discuss BPPV & its clinical features, diagnoses & treatment.
Approach to a deaf patient	1 hour	70. Discuss the approach to a deaf patient.
Approach to Management of Deaf Child	1 hour	71. Differentiate congenital, developmental, and acquired hearing loss & describe the impact of hearing impairment at various ages and their management.

Theme V - Nasal Obstruction

Table 5 Nasal Obstruction

TOPIC	HOURS	LEARNING OBJECTIVES
Applied Anatomy, Physiology of Nose & Paranasal Sinuses	2 hour	72. Discuss the surgical anatomy, physiology & congenital disorders of the nose & PNS. 73. Discuss the congenital disorders of the nose, palate & choanal atresia
Diseases of the Nasal Septum	1 hour	74. Discuss DNS, its types, the clinical features, medical & surgical treatment of nasal obstruction.
Sino-Nasal Polyposis	1 hour	75. Discuss sino-nasal polyposis, its types and describe the clinical features, medical & surgical treatment of nasal polyps.
Fungal Rhinosinusitis	1 hour	76. Discuss various fungi implicated in fungal rhinosinusitis and the appropriate clinical, radiological investigations and treatment of fungal rhinosinusitis.
Sino-Nasal Tumors	1 hour	77. Discuss various benign and malignant tumors affecting the nose and paranasal

TOPIC	HOURS	LEARNING OBJECTIVES
		sinuses and their clinical features, step involved in diagnosis and treatment options.
Trauma to Nose and Face and CSF rhinorrhea	1 hour	78. Discuss the Le Forte classification of mid face fractures & the appropriate clinical and radiological investigations & management of these fractures. 79. Discuss CSF rhinorrhea and the predisposing factors, types, clinical features, investigations and treatment.
Headaches and Facial Pain	1 hour	80. Discuss rhinogenic headaches and the appropriate clinical, radiological investigations and treatment.
Granulomatous Diseases of the Nose	1 hour	81. Discuss various granulomatous disorders affecting the nose & the clinical features, investigations & treatments.
Adenoids	1 hour	82. Discuss anatomy diseases of adenoids and treatment
Juvenile Nasopharyngeal Angiofibroma	1 hour	83. Enumerate diseases of the nasopharynx.

TOPIC	HOURS	LEARNING OBJECTIVES
		84. Discuss Juvenile nasopharyngeal angiofibroma, clinical features, investigations and treatment.
Nasopharyngeal Carcinoma	1 hour	85. Discuss the risk factor, clinical features, investigation, treatment and follow up nasopharyngeal carcinoma
Acute Sinusitis	1 hour	86. Discuss acute sinusitis & the appropriate clinical, radiological investigations and steps involved in treatment of patients.
Chronic Sinusitis	1 hour	87. Discuss chronic sinusitis & the appropriate clinical, radiological investigations and steps involved in treatment of patients.
Complications of Sinusitis	1 hour	88. Enumerate the predisposing factors for development of complications due to sinusitis. 89. Discuss treatment.
Allergic Rhinitis (AR) and Non- allergic	1 hour	90. Discuss allergic rhinitis and its types, pathophysiology, investigations & the medical and surgical treatment.

TOPIC	HOURS	LEARNING OBJECTIVES
		91. Discuss non -allergic rhinitis and the appropriate clinical and radiological investigations and its treatment.
Infective Rhinitis: Acute. & Chronic.	1 hour	92. Discuss infective rhinitis and the medical and surgical treatment of various types of acute and chronic infective rhinitis.
Foreign Body, Rhinolith, Maggots Nose	1 hour	93. Discuss Rhinolith and maggots in the nose and the appropriate medical and surgical treatment of patients with these conditions.
Approach to a patient with Epistaxis	1 hour	94. Approach to a patient with epistaxis 95. Discuss epistaxis & the appropriate clinical, radiological & hematological investigations & treatment of the condition.

Theme VI - Neck Swelling

Table 6 Neck Swelling

TOPIC	HOURS	LEARNING OBJECTIVES
Para pharyngeal Abscess	1 hour	96. Discuss the aetiology and management of each Para pharyngeal abscess.
Retropharyngeal Abscess	1 hour	97. Discuss the types, aetiology, treatment and complications of each retropharyngeal abscess.
Submandibular Abscess	1 hour	98. Discuss the causes and treatment of submandibular abscess.
Trauma of the Larynx and Neck	1 hour	99. Classify the nature of trauma to the neck & larynx. 100. Discuss clinical features, investigations and treatment.
Approach to a neck swelling	1 hour	101. Discuss the approach to a neck swelling.
Evaluation of metastatic lymph nodes and occult primary in Neck (Occult Primary).	1 hour	102. Discuss Occult primary & the predictable nodal drainage in head and Neck region. 103. Discuss the signs and symptoms of occult primary & the appropriate clinical and radiological investigations & different treatment options.

Clinical Schedule

Table 7 : Theme I - Foundation of Otorhinolaryngology & Head and Neck

Topic	Hours	Learning objectives	Assessment method
History taking	01	1. Obtain detailed history of sore throat	OSCE
Examination	02	2. Perform Examination in a sore throat patient including general physical, local and systemic examination	OSCE
Nasopharyngeal examination	02	3. Perform mirror examination of nasopharynx	OSCE
Examination of oral cavity and oropharynx	02	4. Examine oral cavity and oropharynx in a systematic way	OSCE
Hypopharyngeal Examination	01	5. Perform Indirect hypopharyngoscopy with mirror	OSCE
Mouth gauge and other instruments	01	6. Assemble mouth gauge and name the instrument used in tonsillectomy with utility of each instrument.	OSCE
Examination of Neck	02	7. Perform systematic examination of Neck	OSCE

Table 8 : Theme II - Sore Throat

Topic	Hours	Learning objectives	Assessment method
Communicate with patient of tonsillectomy	01	1. Obtain a pre-operative informed consent from a patient of tonsillectomy	OSCE
Tonsillar surgery & its instruments	02	2. Observe tonsillectomy surgery and identify instruments used	OSCE
Conservative management of sore throat	01	3. Discuss a conservative management plan for inpatient acute follicular tonsillitis	OSCE
Scrubbing technique	01	4. Demonstrate scrubbing hands using proper solution & take proper time by proper method	OSCE
Biopsy from oral ulcer	01	5. Assist to take a biopsy from tongue ulcer	OSCE

Table 9 : Theme III - Difficulty in Swallowing

Topic	Hours	Learning objectives	Assessment method
Rigid Endoscopy system	01	1. Identify instruments & equipment used in rigid endoscopy system, describe rigid endoscopies.	OSCE
Oral & oropharyngeal mass palpation	01	2. How to palpate a mass in the oral cavity and oropharynx	OSCE
Oesophagoscopy	02	3. Observe rigid oesophagoscopy done for pharyngeal growth or dysphagia	OSCE

Table 10 : Theme IV - Hoarseness and Stridor

Topic	Hours	Learning objectives	Assessment method
History taking	02	1. Obtain detailed history of hoarseness & stridor	OSCE
Examination	02	2. Perform Examination in a patient with hoarseness & stridor, including general physical, local and systemic examination	OSCE
Indirect laryngoscopy examination	01	3. Perform mirror examination of Laryngopharynx	OSCE
Examination of Neck	01	4. Perform systematic examination of Neck	OSCE
Investigations of Laryngeal diseases	01	5. Fill requisition form for different types of investigations for Laryngeal diseases.	OSCE
Video laryngoscopy	01	6. Observe a video of laryngoscopy for the diagnosis of hoarseness in clinical setting	OSCE
Conservative management of Hoarseness	01	7. Discuss a conservative management plan for a patient of hoarseness due to voice abuse.	OSCE
Laryngoscopy	02	8. Observe rigid system laryngoscopy under general anesthesia and identify instruments used in the procedure	OSCE
Communicate with a patient for voice rest	01	9. Counsel a patient on voice rest	OSCE

Stridor in bilateral abductor vocal paralysis	02	10. Council bilateral abductor paralysis patient & its management in a post thyroidectomy patient	OSCE
Biopsy from laryngeal growth.	01	11. Observe the procedure for taking biopsy from laryngeal growth.	Formative
Tracheostomy	01	12. Demonstrate the procedure of tracheostomy	Formative
Communicate with patient on laryngectomy	01	13. Demonstrate the procedure how to Obtain informed consent from a patient for total laryngectomy	OSCE

Table 11 : Theme V - Deafness, Ear Discharge & Dizziness

Topic	Hours	Learning objectives	Assessment method
History taking	02	1. Obtain detailed history from a patient with ear discharge/deafness/dizziness	OSCE
Local Examination	01	2. Perform clinical examination of the hearing & balance system.	OSCE
Otoscopy Tuning fork test Balance testing Examination under microscope	03	3. Perform otoscopic examination of the ear 4. Perform tuning fork tests 5. Perform test of balance, peripheral & central 6. Assist in performing EUM	OSCE
Investigations of ear diseases	01	7. Discuss & fill requisition form for different types of investigations for ear diseases.	OSCE
Interpretation of audiogram and Impedance	01	8. Discuss the interpretation of audiogram and impedance.	OSCE

Table 12 : Theme VI - Nasal Obstruction

Topic	Hours	Learning objectives	Assessment method
History taking	02	1. Obtain detailed history from a patient with nasal obstruction	OSCE
Local Examination	01	2. Perform clinical examination of the nose & paranasal sinuses.	OSCE
Anterior & posterior Rhinoscopy		3. Perform anterior & posterior Rhinoscopies with mirror	
Probe test		4. Perform probe test	
Nasendoscopy	01	5. Assist in performing nasendoscopy.	OSCE
Pus culture / sensitivity	01	6. Perform Take swab from nose for different purpose	
X - Rays nasopharynx / PNS		7. interpret X - Rays nasopharynx/PNS for enlarged soft tissues shadow	OSCE
Nasal patency & adenoid facies in enlarged adenoids	01	8. Perform examination for nasal patency in enlarged adenoids.	OSCE

Adenoid surgery	01	9. Observe adenoid surgery being done in operating room	Formative
CT scan nose & nasopharynx	01	10. Interpret CT scan in nasopharyngeal angiofibroma, describe bowing sign.	Formative
Nasopharyngeal Biopsy	01	11. Observe surgery for nasopharyngeal biopsy	Formative
Investigations of nose & paranasal sinuses diseases	01	12. Document Fill requisition form for different types of investigations for nose & paranasal sinuses diseases.	Formative

Table 13 : Theme VII - Swelling Neck

Topic	Hours	Learning objectives	Assessment method
Examination of Neck Nodes	02	1. Perform systematic examination of all groups of neck nodes	OSCE
Examination of lump in the neck	01	2. Perform examination of lump in the neck in a systematic way.	OSCE
Surgery on a pharyngeal abscess	01	3. Observe surgery on a pharyngeal abscess & describe drainage of peritonsillar abscess	OSCE
Thyroid examination	01	4. Perform Thyroid Examination both anatomically & functionally	OSCE
Pharyngeal abscess surgery related instruments	01	5. Identify instruments used in drainage of pharyngeal abscess surgery	OSCE
Examination of parotid	01	6. Perform examination of parotid swelling	OSCE
Examination of thyroid	01	7. Perform examination of thyroid gland	OSCE

Learning Resources

Table 15: References Textbooks

S#	Subjects	Resources
1.	Anatomy	<p>A. GROSS ANATOMY</p> <p>1. K.L. Moore, Clinically Oriented Anatomy</p> <p>B. EMBRYOLOGY</p> <p>1. Keith L. Moore. The Developing Human</p> <p>2. Langman’s Medical Embryology</p>
2.	Community medicine	<p>1. Preventive and Social Medicine by K Park</p> <p>2. Community Medicine by M. Ilyas</p> <p>3. Basic Statistics for the Health Sciences by Jan W Kuzma</p> <p>4. Textbook of Community Medicine and Public Health, 2018. Saira Afzal, Sabeena Jala</p>
3.	Physiology	<p>1. Textbook Of Medical Physiology by Guyton And Hall</p> <p>2. Ganong ‘ S Review of Medical Physiology</p> <p>3. Human Physiology by Lauralee Sherwood</p> <p>4. Berne & Levy Physiology</p> <p>5. Best & Taylor Physiological Basis of Medical Practice</p>
4.	ENT	<p>1. Diseases of Ear, nose and Throat by Logan Turner, 11th edition</p> <p>2. Lecture notes Ear, Nose and Throat Notes by P. D. Bull, 10th edition</p>

		3. Diseases of Ear, Nose and Throat by P.L. Dhingra, 6th edition (optional reading) Reference Books 1. Current medical diagnosis & treatment by Maxine A. Papadakis 2. Scott-Brown's Otorhinolaryngology, Head & Neck Surgery
5.	Pathology	1. Robbins & Cotran, Pathologic Basis of Disease, 9th edition. 2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD
5.	Pediatrics	1. Nelson Textbook of Pediatrics, 19th Edition 2. Textbook of Pediatrics by PPA, preface written by S. M. Haneef 3. Clinical Pediatrics by Lakshmanaswamy Aruchamy, 3rd Edition
6.	Pharmacology	1. Lippincott Illustrated Pharmacology 2. Basic and Clinical Pharmacology by Katzung

Assessment Plan - 4th Year MBBS

The year-4 will be assessed in 4 blocks

- 1) Block-1 (Neurosciences-2 module) will be assessed in **paper-J**
- 2) Block-2 (GIT and hepatobiliary module) will be assessed in **paper-K**
- 3) Block-3 (Renal-2, Endocrine & Reproduction-2 module) will be assessed in **paper-L**
- 4) Block-4 (ENT and EYE modules) will be assessed in **paper-M**
- 5) Each written paper consists of 120 MCQs.
- 6) Internal assessment will be added to final marks in KMU as shown in below table.
- 7) In OSPE, each station will be allotted 6 marks, and a total of 120 (+10% marks of internal assessment) marks are allocated for each OSPE/OSCE examination.

4th Year MBBS Modules Assessment Plan

Theory paper	Modules	Theory marks	Internal assessment theory (10%)	OSPE/OSPE	Internal assessment OSPE/OSPE (10%)	Total Marks
Paper J	Neurosciences-2	120	13	120	13	266
Paper K	GIT-2	120	13	120	13	266
Paper L	Renal-2, Endocrine & Reproduction-2	120	14	120	13	267
Paper M	ENT and EYE	120	13	120	13	266
Research*				20	15	35
Total Marks		480	53	500	67	1100

*Research viva of 20 marks will be conducted in paper-L. However, the rest of 15 marks will be decided by the concerned department internally for the contribution of the students in research project/thesis.

Assessment Blueprints

Table 16: Paper M (ENT)

Subject	Total MCQs
ENT	60
EYE	60
Total	120

Table 17: ENT OSCEs

Subject	Total OSCE stations
ENT	10
EYE	10
Total	20

A minimum of 20 stations will be used in final exams. Total marks will be 120 (6 marks for each station).