

Dow University of Health Sciences



Head and Neck MODULE

6 weeks, 6 credit hours

Second Year MBBS

5 YEAR CURRICULAR ORGANIZATION

Spiral	year	Modules				
First Spiral	I	FND1- Foundation Cell, Genetics & Cell Death (Basics of Anatomy, Physiology, Biochemistry, Gen. Pathology, Gen. Pharmacology, Community Medicine & Behavioral Sciences, Genetics, Microbiology, Bioethics) 9 Weeks		HEM1- Blood Module Immunity, Inflammation, Tissue repair, Antimicrobials & Neoplasia 9 Week		
		LCM1- Locomotion Bones, Joints, Nerves & Muscles, 9 weeks		RSP1- Respiratory System 6 weeks	CVS1- Cardiovascular System 4 weeks	
	II	NEU1- Nervous System 8 weeks		HNN1- Head & Neck & Special 6 weeks	END1- Endocrinology 5 weeks	
		GIL 1-GIT and Liver 8 weeks		EXC1- Renal and Excretory System 5 weeks	REP1- Reproductive System 5 weeks	
Second Spiral	III	IDD 1- Infectious diseases 5 weeks	HEM2- Hematology 5 weeks	RSP2- Respiratory System 5 weeks	CVS2- Cardiovascular System 5 weeks	
		GIL 2-GIT and Liver (including Nutritional Disorders) 8weeks		EXC2- Renal & Excretory System 5 weeks	END2- Endocrinology 5 weeks	
	IV	ORT2 Orthopedics, Rheumatology, Trauma, 7 weeks		REP2- Reproductive System 8 Weeks	Physical Medicine & Rehabilitation 3 weeks	
		DPS-Dermatology Plastic Surgery / Burns 2 weeks	GEN- Genetics 1 week	NEU2- Neurosciences and Psychiatry 8 weeks	ENT* 4 week	OPH-EYE 4 week
Third Spiral	V	Half of the class will cover Medicine & Allied and the other half will cover Surgery & Allied modules in first half of teaching session. The two halves will exchange in latter half of year.				
		Clinical Rotation 8:30 to 1:00 (with Ambulatory, Emergency, Intensive care) In Medicine, Pediatrics, Cardiology and Neurology units <ul style="list-style-type: none"> ▪ Lecture on problem based approach, twice a week ▪ Ward tutorial twice a week ▪ Student research presentation once a week 		Clinical Rotation 8:30 to 1:00 (Inpatient, Ambulatory, Emergency, Intensive care and Operation Theatres) In Surgery, Gynae & Obstetrics, Orthopedics and Neurosurgery. <ul style="list-style-type: none"> ▪ Lecture on problem based approach, twice a week ▪ Ward tutorial twice a week ▪ Student research presentation once a week 		
		PARALLEL THEMES: The following themes are not part of any individual module but shall run concurrently: Communication Skills, Clinical Skills, Writing and Presentation Skills, Article Writing, Ethics				

RATIONALE:

Head and neck is a special region of the body where brain, spinal cord, organs of special senses like eyes, ears, nose and the proximal alimentary and respiratory tracts exist in close proximity. The anatomical relationships of these organs to each other are important to understand as often diseases afflicting one of these also affect other organs by contiguity. Injuries to the region of head, face & neck are associated with high mortality & morbidity. It is necessary to study this region as a separate entity although it is not a separate system. This module provides the basic understanding of the anatomy and physiology of the components of head and neck.

TERMINAL OBJECTIVE:

By the end of this module student will be able to:

- Understand and describe the anatomy of structures of head and neck
- Recognize the different special senses
- Identify the histology of various organs in head & neck
- Discuss the development of branchial arches
- Describe the physiological mechanisms of all special senses
- Describe the clinical significance of errors of refraction
- Elaborate the histopathology of neoplastic lesions involving head and neck

MODULE OBJECTIVES:

1. Overview the head and neck regions
2. Identify the derivatives of pharyngeal arches and pouches
3. Identify the abnormalities of pharyngeal arches and pouches
4. Identify the features of the vault & base of skull
5. Recognize the importance of scalp in the region of head
6. Identify the views of skull
7. Enumerate the contents of orbital region

8. Correlate the structures of eye with its functions
9. Identify the disorders of optical system at different levels
10. Explain the biochemical functions of vitamin A and effects of vitamin A deficiency on vision
11. Describe the major and minor salivary glands
12. Enumerate the structures of the temporal region
13. Recognize the importance of mandibular region in the face of an individual
14. Identify the structures of ear & histological features of ear
15. Identify the parts of auditory pathway and describe the mechanism of transmission of sound
16. Describe mechanism of balance how the body regulate balance
17. Identify the structures of nose & Para-nasal Sinuses
18. Identify the structure and function of oral cavity & related disorders
19. Describe sense of olfaction with relation to anatomical & biochemical function of related structures
20. Describe the deep structures in the neck.
21. Enumerate 12 cranial nerves Explain clinical effects of injury to each cranial nerve

MODULE CONTENTS:

ANATOMY

Gross Anatomy:

1. HNN1 ANG 1 Skull as a whole and vault
2. HNN1 ANG 2 Scalp (layers, nerves & vessels)
3. HNN1 ANG 3 Skull; Norma frontalis
4. HNN1 ANG 4 Skull :Norma Lateralis And Occipitalis
5. HNN1 ANG 5 Skull: Norma Basalis Anterior and middle part
6. HNN1 ANG 6 Skull: Norma Basalis middle and posterior part
7. HNN1 ANG 7 Eyelids & lacrimal Apparatus & Ciliary Ganglion
8. HNN1 ANG 8 Gross feature of eye
9. HNN1 ANG 9 Orbital cavity Boundaries & extra ocular muscles
10. HNN1 ANG 10 Orbital cavity contents except extra ocular muscles
11. HNN1 ANG 11 Face (Muscles, Nerves: Extra Cranial Part of V & VII)
12. HNN1 ANG 12 Arteries & Veins of Face
13. HNN1 ANG 13 Mandible
14. HNN1 ANG 14 Vessels and nerves of nasal cavity
15. HNN1 ANG 15 Eye
16. HNN1 ANG 16 External Ear (Pinna & External Meatus) Middle Ear Cavity & its Contents + Histology
17. HNN1 ANG 17 Gross and Histology of Internal Ear
18. HNN1 ANG 18 Para-nasal Sinuses
19. HNN1 ANG 19 Temporal Region & Temporo mandibular Joint
20. HNN1 ANG 20 Hard and soft palate
21. HNN1 ANG 21 Infratemporal Fossa & its contents (including muscles of mastication)
22. HNN1 ANG 22 Pterygopalatine Fossa
23. HNN1 ANG 23 Vestibulo cochlear Nerves & Intracranial Part of facial nerve
24. HNN1 ANG 24 Parotid region
25. HNN1 ANG 25 Salivary Gland
26. HNN1 ANG 26 Oral Cavity
27. HNN1 ANG 27 Tongue (gross + histology)
28. HNN1 ANG 28 Deep Cervical Fascia & Platysma
29. HNN1 ANG 29 Prevertebral Fascia & Scaleni Muscles
30. HNN1 ANG 30 Root of neck

31. HNN1 ANG 31 Cervical vertebrae Joints of cervical region
32. HNN1 ANG 32 Anterior Triangle of Neck + Supra and Infra Hyoid Muscles
33. HNN1 ANG 33 Posterior Triangle (Trapizeus & Sternocleidomastoid muscles) Cervical Plexus & Accessory Nerve
34. HNN1 ANG 34 Sub occipital triangle
35. HNN1 ANG 35 Arteries of head and neck
36. HNN1 ANG 36 Veins of head and neck and lymph drainage of head and neck
37. HNN1 ANG 37 Thyroid and Parathyroid Gland
38. HNN1 ANG 38 Sub-Mandibular region
39. HNN1 ANG 39 Pharynx Including tonsils
40. HNN1 ANG 40 Larynx
41. HNN1 ANG 41 Lesions of Cranial Nerve 1st -6th
42. HNN1 ANG 42 Glossopharyngeal and Vagus nerves
43. HNN1 ANG 43 Lesions of Cranial Nerve 7th – 12th

General Histology:

1. HNN1 ANH 1 Eyelids, Conjunctiva, Lacrimal Apparatus
2. HNN1 ANH 2 Eye
3. HNN1 ANH 3 Eyelids and lacrimal apparatus (practical)
4. HNN1 ANH 4 Nasal Cavity Respiratory & Olfactory Epithelium
5. HNN1 ANH 5 Eye (practical)
6. HNN1 ANH 6 Oral cavity
7. HNN1 ANH 7 Salivary glands (practical)
8. HNN1 ANH 8 Tongue (practical)
9. HNN1 ANH 9 Thyroid and Parathyroid Gland

General Embryology:

1. HNN1 ANE 1 Development of branchial app (arches, pouches and clefts)
2. HNN1 ANE 2 Development of Eye
3. HNN1 ANE 3 Development of Face & Nose
4. HNN1 ANE 4 Development of Ear
5. HNN1 ANE 5 Development of Soft and Hard Palate & Congenital Anomalies
6. HNN1 ANE 6 Development of tongue and thyroid

PHYSIOLOGY

1. [HNN1 PHY 1](#) Overview of special senses
2. [HNN1 PHY 2](#) Visual Acuity and Errors of Refraction
3. [HNN1 PHY 3](#) Eye movements & their control
4. [HNN1 PHY 4](#) Visual Pathway & its lesions
5. [HNN1 PHY 5](#) Formation & Circulation of Aqueous Humor (Glaucoma)
6. [HNN1 PHY 6](#) Photo Transduction
7. [HNN1 PHY 7](#) Sense of Olfaction: its receptor & pathway
8. [HNN1 PHY 8](#) Sense of Hearing, its mechanism and auditory pathway
9. [HNN1 PHY 9](#) Mechanism of Balance And its related disorders
10. [HNN1 PHY 10](#) Disorders of hearing
11. [HNN1 PHY 11](#) Sense of Taste, its receptors and its pathway
12. [HNN1 PHY 12](#) Mechanism of swallowing
13. [HNN1 PHY 13](#) Function of larynx
14. [HNN1 PHY 14](#) Visual acuity (Practical)
15. [HNN1 PHY 15](#) Field of vision and perimeter (Practical)
16. [HNN1 PHY 16](#) Hearing conduction test (Practical)
17. [HNN1 PHY 17](#) Thermal Sensation (Practical)

BIOCHEMISTRY

1. [HNN1 BIO 1](#) Visual Cycle
2. [HNN1 BIO 2](#) Vitamin A and its related disorder

BEHAVIORAL SCIENCES

1. [HNN1 BHE 1](#) Personality

OPHTHALMOLOGY

1. [HNN1 OPH 1](#) Errors of Refraction, presbyopia & management
2. [HNN1 OPH 2](#) Cranial nerve palsy affecting the eye and pupillary disorder

The contents are subjected to be altered according to requirement of academic calendar

TEACHING STRATEGIES

LARGE CLASS FORMATS

- Lectures

SMALL GROUP DISCUSSION

- Demonstrations
- Tutorial
- Practical
- Skill labs
- Case based learning sessions

CASE BASED LEARNING

1. CBL :1

Learning Objectives:

By the end of the CBL, students will be able to

- Define double vision
- Understand the pathophysiology of the given presentation
- Describe the optic pathway.
- Correlate different visual disturbances with reference to optic pathway

Describe management plan for the given pathology

2. CBL :2

Learning Objectives:

By the end of the CBL, students will be able to

- Describe the functions of seventh cranial nerve
- Elaborate the correlation of seventh cranial nerve and sense of hearing
- Describe deafness ,its types and causes
- Define management plan for the given pathology

3. CBL :3

Learning Objectives:

By the end of the CBL, students will be able to

- Describe embryological development of lips and palate.
- Enlist the different types of cleft lips and palate.
- Discuss the causes and treatment of cleft lip and palate.

4. CBL :4

Learning Objectives:

By the end of the CBL, students will be able to

- Correlate the Anatomy of this region.
- Understand the innervations of tongue and the oral cavity.
- Recognize what symptoms can occur with this type of lesion in this area.
- Recognize the relationship of Paan / Gutka / Tobacco with Carcinoma tongue.

LEARNING OBJECTIVES OF SKILL LAB

I. Introduction to CNS examination

• INTRODUCTION (RATIONALE)

Diseases of nervous system are common and are an important cause of disability and deformity both in adults and children. **Nervous system examination** is performed as an integral part of physical examination, or when a patient presents

with a neurological problem (for example: headache, vertigo, seizure, stroke, numbness, muscular weakness, gait difficulty, speech disorder).

- LEARNING OBJECTIVES

At the end of the session students should be:-

- Familiar with the correct method of nervous system examination.

II. Lumbar Puncture

- INTRODUCTION/RATIONALE:

A procedure in which a hollow needle and style are introduced into the subarachnoid space of the lumbar part of the spinal canal to obtain cerebrospinal fluid (CSF) for therapeutic and diagnostic purposes. Strict aseptic technique is used.

- LEARNING OBJECTIVES:

After the session the students should be able to:

- i. Enlist the instrument needed for the procedure
- ii. Demonstrate the correct aseptic technique of Lumber Puncture.

ASSESSMENT PLAN

HEAD AND NECK MODULE

	WEIGHTAGE
ANNUAL EXAM	80%
MODULE EXAM (Internal Evaluation)	
Theory	10%
Practical	10%

CREDIT HOURS

HEAD & NECK MODULE	6
-------------------------------	----------

Contact HOURS (DISCIPLINE WISE)

Discipline	Contact Hours
Gross Anatomy	43
Histology	11
Embryology	6
Biochemistry	2
Physiology	19
Ophthalmology	2
Behavioral Sciences	1
CBL	6
Skill Lab	2

BOOKS

ANATOMY

- **CLINICALLY ORIENTED ANATOMY**
KEITH.L.MOORE, Arthur F. Dalley, Anne M.R. Agur
7th or Latest EDITION
- **GRAY'S ANATOMY FOR STUDENTS**
Drake & Vogl & Mitchell
3rd or Latest EDITION
- **CLINICAL ANATOMY BY REGIONS (REFERENCE BOOK)**
Richard S. SNELL
9th EDITION
- **LAST'S ANATOMY: REGIONAL & APPLIED (REFERENCE BOOK)**
Chummy S. Sinnatamby
12th or Latest EDITION
- **ATLAS OF HUMAN ANATOMY**
FRANK H.NETTER
6th EDITION

EMBRYOLOGY

- **LANGMAN'S MEDICAL EMBRYOLOGY**
T.W.SADLER
13th EDITION
- **THE DEVELOPING HUMAN CLINICALLY ORIENTED EMBRYOLOGY (REFERENCE BOOK)**
MOORE & PERSAUD & TORCHIA
10th EDITION

HISTOLOGY

- **MEDICAL HISTOLOGY**
LAIQ HUSSAIN SIDDIQUI
5TH or Latest EDITION
- **WHEATERS FUNCTIONAL HISTOLOGY**
BARBARA YOUNG
5th EDITION
- **BASIC HISTOLOGY(TEXT AND ATLAS) (REFERENCE BOOK)**
LUIZ JUNQUEIRA, JOSE CARNEIRO
11th or Latest EDITION

PHYSIOLOGY

- **GUYTON AND HALL TEXTBOOK OF MEDICAL PHYSIOLOGY**
GUYTON AND HALL
13th EDITION

BIOCHEMISTRY

- **LIPPINCOTT'S ILLUSTRATED REVIEWS SERIES**
DENISE R. FERRIER
6th EDITION
- **HARPERS ILLUSTRATED BIOCHEMISTRY (REFERENCE BOOK)**
VICTOR RODWELL, DAVID BENDER, KATHLEEN M. BOTHAM, PETER J. KENNELLY,
P. ANTHONY WEIL
28th EDITION

For Query

Chief Module Coordinator : Prof. Dr. Naheed Khan

(naheed.khan@duhs.edu.pk)

Module Coordinators

Dr. Sabahat Babar

(sabahat.babar@duhs.edu.pk)

Dr. Mehwish Sajjad

(mehwish.sajjad@duhs.edu.pk)
