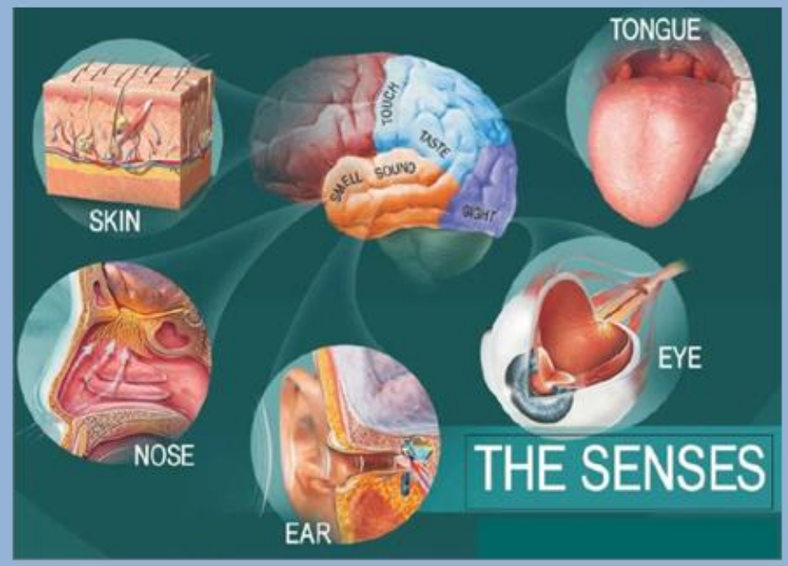
Department of Medical Education (DME)

Special Senses Module

Study Guide
Second Year MBBS 2022 - 2023



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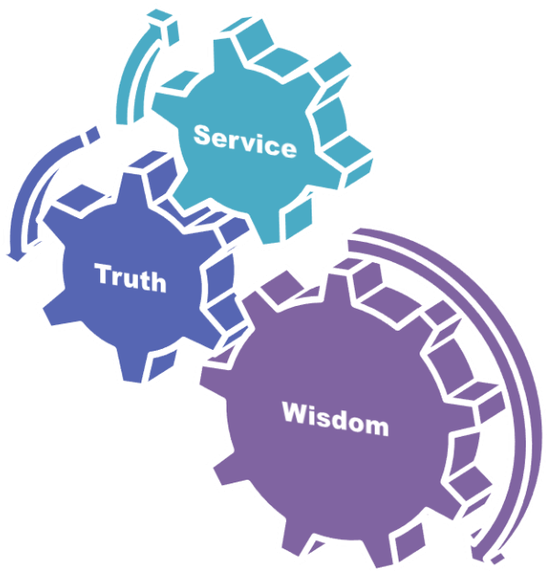
University Moto, Vision, Values & Goals

RMU Motto



Mission Statement

To impart evidence-based research-oriented health professional education in order to provide best possible patient care and inculcate the values of mutual respect, ethical practice of healthcare and social accountability.

Vision and Values

Highly recognized and accredited centre of excellence in Medical Education, using evidence-based training techniques for development of highly competent health professionals, who are lifelong experiential learner and are socially accountable.

Goals of the Undergraduate Integrated Modular Curriculum

The Undergraduate Integrated Learning Program is geared to provide you with quality medical education in an environment designed to:

- Provide thorough grounding in the basic theoretical concepts underpinning the practice of medicine.
- Develop and polish the skills required for providing medical services at all levels of the health care delivery system.
- Help you attain and maintain the highest possible levels of ethical and professional conduct in your future life.
- Kindle a spirit of inquiry and acquisition of knowledge to help you attain personal and professional growth & excellence.

Second Year MBBS 2023

Study Guide

Special Senses Module

Discipline Wise Details of Modular Contents

Block	Subjects	Embryology	Histology	Histology Practical SKL. Lab.	Gross Anatomy	CBL	SDL
II	• Anatomy	• Development of Eye • Development of Pharyngeal arches • Development of Ear	• Histology of Eye • Histology of Ear	• Cornea • Retina • External and Internal ear	• Facial and superior aspect of cranium (Norma frontalis, Norma verticalis) • External surface of cranial base (Norma basalis) • Lateral and occipital aspect of cranium (Norma lateralis, occipitalis) • Mandible • Temporomandibular joint • Face • Scalp • Orbit boundaries and Extraocular muscles • Vessels and nerves of orbit • Eyeball • Eyelid and lacrimal apparatus • Parotid and temporal region • Infratemporal fossa • Pterygopalatine fossa • External and middle ear • Inner ear • Nose and paranasal sinuses	• Oculomotor nerve palsy • Extra Dural hemorrhage	• Norma frontalis, verticalis and basalis • Lateralis and occipitalis, TMJ & Mandible Orbit boundaries • Extraocular muscles • Vessels and Nerves of orbit • Temporal and Infra temporal region, Pterygopalatine fossa • External and middle ear
	• Physiology	• Physiology of Ear & Eye					
	• Biochemistry	• Receptors, Second messengers, Neurotransmitters, Vitamin A role in vision					
	• Biomedical Ethics / Professinalism	• Ethical dilemmas Involving breach in Justice					
	• Behavioral Sciences	• Perception					
	• Research Club Activity	• Synopsis writing					
	• Radiology & Artificial Intelligence	• General radiologic concepts					
	• Family Medicine	• Approach to a patient with earache					

	• Vertical components	• The Holy Quran Translation Component
	• Vertical Integration	Clinically content relevant to Speical Senses module • Plastic surgery (Surgery) • Imaniat (Hadith) (Islamiayat) • Pakistan ki jughrafiyai ahmiyat aur difai haisiyat (Pak Studies) • Nasal polyp & Sinusitis & Diseases of External Nose (ENT) • Cataract & Glaucoma & Anti glaucoma drugs (Eye) • Conjunctivitis Chalazion (Eye) • Ocular trauma & Ocular Procedures (Eye) • Zimidaari aur taluqaat (Islamiayat) • Pakistan k hamsaya mumalik se taluqaat (Pak Studies) • Refractive Errors Strabismus (Eye) • Management Of Covid-19 Sense Of Smell (Medicine) • Otitis Media Ear Discharge &Hearing Problems in Children (ENT) • Facial fractures (ENT) • Uswa-e-hasna (Islamiayat) • Pakistan k qudrati wasail-maadniyaat (Pak Studies)

Table of Contents

Special Senses Module Team

Module Name	:	Reproduction Module
Duration of module	:	04 Weeks
Coordinator	:	Dr. Rahat
Co-coordinator	:	Dr. Fareed Ullah
Reviewed by	:	Module Committee

Module Committee		
1.	Vice Chancellor RMU	Prof. Dr. Muhammad Umar
2.	Director DME	Prof. Dr. Rai Muhammad Asghar
3.	Convener Curriculum	Prof. Dr. Naeem Akhter
4.	Chairperson Anatomy & Dean Basic Sciences	Prof. Dr. Ayesha Yousaf
5.	Additional Director DME	Prof. Dr. Ifra Saeed
6.	Chairperson Physiology	Prof. Dr. Samia Sarwar
7.	Chairperson Biochemistry	Dr. Aneela Jamil
8.	Focal Person Anatomy Second Year MBBS	Prof. Dr. Ifra Saeed
9.	Focal Person Physiology	Dr. Sidra Hamid
10.	Focal Person Biochemistry	Dr. Aneela Jamil
11.	Focal Person Pharmacology	Dr. Zunera Hakim
12.	Focal Person Pathology	Dr. Asiya Niazi
13.	Focal Person Behavioral Sciences	Dr. Saadia Yasir
14.	Focal Person Community Medicine	Dr. Afifa Kulsoom
15.	Focal Person Quran Translation Lectures	Dr. Fahad Anwar

Module Task Force Team		
1.	Coordinator	Dr. Rahat (Senior Demonstrator of Biochemistry)
2.	DME Focal Person	Dr. Sidra Hamid (Assistant Professor of Physiology)
3.	Co-coordinator	Dr. Rahat (Senior Demonstrator of Biochemistry)
4.	Co-Coordinator	Dr. Fareed Ullah (Senoir Demonstrator of Physiology)
5.	Co-coordinator	Dr. Sadia Baqir (APWMO of Anatomy)

DME Implementation Team		
1.	Director DME	Prof. Dr. Rai Muhammad Asghar
2.	Implementation Incharge 1st & 2nd Year MBBS & Add. Director DME	Prof. Dr. Ifra Saeed
3.	Deputy Director DME	Dr Shazia Zaib
4.	Module planner & Implementation coordinator	Dr. Sidra Hamid
5.	Editor	Muhammad Arslan Aslam

Module III – Special Senses Module

Rationale: Visual system is a blessing, and no one can underestimate the importance of sight in ones life. It is a highly sensitive system. Unfortunately, it is among the neglected parts of health care and millions of people are getting blind either due to negligence or inappropriate treatment. Refractive errors, cataract, glaucoma and diabetic eye disease are among the ophthalmic diseases which can be easily treated, and morbidity prevented if diagnosed earlier. A young doctor must know how to screen out eye diseases and treat where possible. It is our responsibility to provide them with the required acumen.

Ear, Nose and Throat disorders are very common in the community and form a major portion of clinical practice of a general / family physician. Common ENT problems like phayngitis, tonsillitis, Otitis media, rhinosinusitis, nasal allergy, deafness, vertigo and balance problems can be diagnosed and treated easily. The prevalence of cancer of the upper aerodigestive tract is very high in Pakistan. These patients must be diagnosed and treated at the early stages to reduce morbidity and mortality. Medical students must be made aware of the importance of proper management of ENT problems for the benefit of community and humanity.

Module Outcomes

By the end of the module, students will be able to:

Knowledge

- Integrate the basic knowledge and clinical problems.
- Take detailed history, examine the patients and make a provisional diagnosis with the plan of management.
- Timely refer the patient to an ophthalmologist or ENT specialist.
- Used technology based Medical Education including **Artificial Intelligence**
- Appreciate concept and importance of **Family Medicine, Biomedical Ethics, & Research.**

Skills

- Demonstrate effective skill for performing and interpreting various laboratory tests like pregnancy test.
- Demostrate awareness of ethical, legal and social implecation of issues related to bioethics.

Attitude

- Demonstrate effective communication skill strategies while interacting with patients.
- Demonstrate teamwork and positive interaction with colleges.
- Demonstrate self learning attitude and problem-solving skills.

SECTION - I

Terms & Abbreviations

Contents

Tables & Figures

Table1. Domains of Learning According to Blooms Taxonomy

Sr. #	Abbreviation	Domains of learning
1.	C	**Cognitive Domain:** knowledge and mental skills.
	• C1	Remembering
	• C2	Understanding
	• C3	Applying
	• C4	Analyzing
	• C5	Evaluating
	• C6	Creating
2.	P	**Psychomotor Domain:** motor skills.
	• P1	Imitation
	• P2	Manipulation
	• P3	Precision
	• P4	Articulation
	• P5	Naturalization
3.	A	**Affective Domain:** feelings, values, dispositions, attitudes, etc
	• A1	Receive
	• A2	Respond
	• A3	Value
	• A4	Organize
	• A5	Internalize

Teaching and Learning Methodologies / Strategies

Large Group Interactive Session (LGIS)

The large group interactive session is structured format of Prof Umar Model of Integrated lecture. It will the followed for delivery of all LGIS. The lecturer will introduce a topic or common clinical condition and explains the underlying phenomena through questions, pictures, videos of patients, interviews and exercises, etc. Students are actively involved in the learning process.

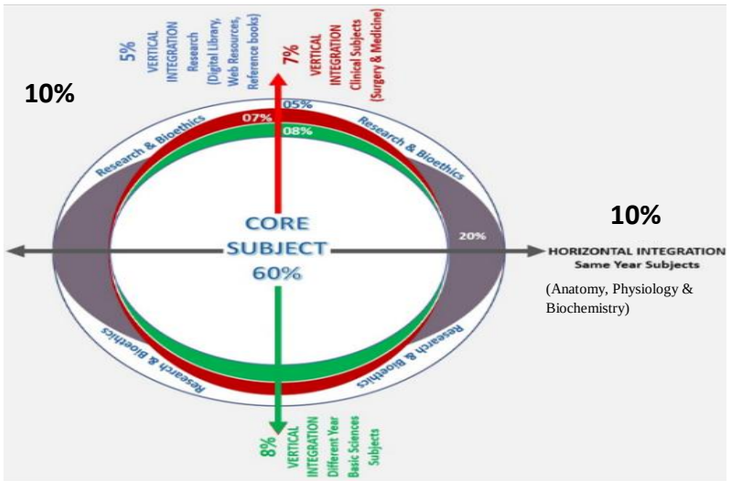


Figure 1. Prof Umar's Model of Integrated Lecture

Small Group Discussion (SGD)

This format helps students to clarify concepts acquire skills and attitudes. Sessions are structured with the help of specific exercises such as patient case, interviews or discussion topics or power point presentations. Students exchange opinions and apply knowledge gained from lectures, SGDs and self study. The facilitator role is to ask probing questions, summarize and help to clarify the concepts.

Table 2. Standardization of teaching content in Small Group Discussions

S. No	Topics	Approximate %
1	Title Of SGD	
2	Learning Objectives from Study Guides	
3	Horizontal Integration	5%+5%=10%
4	Core Concepts of the topic	60%
5	Vertical Integration	20%
6	Related Advance Research points	3%
7	Related Ethical points	2%

Table 3. Steps of Implementation of Small Group Discussions

Step 1	Sharing of Learning objectives by using students Study guides	First 5 minutes
Step 2	Asking students pre-planned questions from previous teaching session to develop co-relation (these questions will be standardized)	5minutes
Step 3	Students divided into groups of three and allocation of learning objectives	5minutes
Step 4	ACTIVITY: Students will discuss the learning objectives among themselves	15 minutes
Step 5	Each group of students will present its learning objectives	20 min
Step 6	Discussion of learning content in the main group	30min
Step 7	Clarification of concept by the facilitator by asking structured questions from learning content	15 min
Step 8	Questions on core concepts	
Step 9	Questions on horizontal integration	
Step 10	Questions on vertical integration	
Step 11	Questions on related research article	
Step 12	Questions on related ethics content	
Step 13	Students Assessment on online MS teams (5 MCQs)	5 min
Step 14	Summarization of main points by the facilitator	5 min
Step 15	Students feedback on the SGD and entry into log book	5 min
Step 16	Ending remarks	

Self-Directed Learning (SDL)

- Self- directed learning is a process where students take primary charge of planning, continuing, and evaluating their learning experiences.
- Time Home assignment
- Learning objectives will be defined
- Learning resources will be given to students = Textbook (page no), web site
- Assessment:

  i Will be online on LMS (Mid module/ end of Module)

  ii.OSPE station

Case Based Learning (CBL)

- It's a learner centered model which engages students in discussion of specific scenarios that typically resemble real world examples.
- Case scenario will be given to the students
- Will engage students in discussion of specific scenarios that resemble or typically are real-world examples.
- Learning objectives will be given to the students and will be based on
  i. To provide students with a relevant opportunity to see theory in practice
  ii. Require students to analyze data in order to reach a conclusion.
  iii. Develop analytic, communicative, and collaborative skills along with content knowledge.

Problem Based Learning (PBL)

- Problem-based learning (PBL) is a student-centered approach in which students learn about a subject by working in groups to solve an open-ended problem.
- This problem is what drives the motivation and the learning.

The 7- Jump-Format of PBL (Masstricht Medical School)	
Step 7	Synthesize & Report
Step 6	Collect Information from outside
Step 5	Generate learning Issues
Step 4	Discuss and Organize Ideas
Step 3	Brainstorming to Identify Explanations
Step 2	Define the Problem
Step 1	Clarify the Terms and Concepts of the Problem Scenario
Problem- Scenario	

Figure 2. PBL 7 Jumps Model

Practical Sessions/Skill Lab (SKL)

Practical Session/ Skill Lab (SKL)	
Demonstration/ power point presentation 4-5 slide	10-15 minutes
Practical work	25-30 minutes
Write/ draw and get it checked by teacher	20-25 minutes
05 mcqs at the end of the practical	10 minutes
At the end of module practical copy will be signed by head of department	
At the end of block the practical copy will be signed by Head of Department Dean Medical education department QEC	

SECTION – II

Learning Objectives, Teaching Strategies & Assessments

Contents

- Horizontally Integrated Basic Sciences (Anatomy, Physiology & Biochemistry)
- Large Group Interactive Session:
  - Anatomy (LGIS)
  - Physiology (LGIS)
  - Biochemistry (LGIS)
- Small Group Discussions
  - Anatomy (SGD)
  - Physiology (SGD)
  - Biochemistry (SGD)
- Self-Directed Topic, Learning Objectives & References
  - Anatomy (SDL)
  - Physiology (SDL)
  - Biochemistry (SDL)
- Skill Laboratory
  - Anatomy
  - Physiology
  - Biochemistry

Horizontally Integrated Basic Sciences (Anatomy, Physiology & Biochemistry)

Anatomy Large Group Interactive Session (LGIS)

Topics	At the end of lecture students should be able to:	Learning Domains	Teaching Strategy	Assessment Tools
Development				
Development of Pharyngeal apparatus	Define the pharyngeal arch apparatus. Describe components of pharyngeal arches. Enlist derivatives of each of pharyngeal arch. Describe the development of pharyngeal grooves and pharyngeal membranes. Enlist the derivates of pharyngeal pouches and clefts. Enlist common birth defects associated with pharyngeal apparatus. Explain the embryological basis of these defects. Understand the bio-physiological aspects of arches. Read relevant research article. Use Digital Library	C1 C2 C1 C2 C2 C1 C3 C3 C3 C3	LGIS	MCQ SAQ VIVA
Development of face, nasal cavities	Describe the developmental stages of face. Discuss the role of neural crest cells in development of facial skeleton and pharyngeal arch derivatives. Describe the molecular regulation of facial development. Discuss the congenital anomalies of face. Describe the development of nasal cavities and paranasal sinuses. Understand the bio-physiological aspects of face & nasal cavities Read relevant research article. Use Digital Library	C2 C2 C2 C3 C2 C3 C3 C3	LGIS	MCQ SAQ VIVA
Development of palate	Discuss the development of primary and secondary palate. Enlist the different varieties of cleft palate. Discuss the etiology of cleft lip and cleft palate. Describe embryological basis of craniofacial anomalies. Understand the bio-physiological aspects of Palate. Read relevant research article. Use Digital Library	C2 C2 C1 C3 C3 C3 C3	LGIS	MCQ SAQ VIVA

Development of Eye (1)	Describe the different embryological sources of development of eye. Describe development of eye field on rostral neural tube. Enlist derivatives of optic cup and development of retina. Recall the differentiation of optic grooves and optic vesicle. Discuss transformation of optic vesicles into optic cup. Describe development of retina. Read relevant research article. Use Digital Library	C2 C2 C1 C1 C2 C2 C3 C3	LGIS	MCQ SAQ VIVA
Development of Eye (11)	Describe formation of optic stalk. Explain induction of optic placodes and lens primordia. Enumerate neural crest cell and mesenchymaly derived eye structures. Enlist the molecular regulation of eye development. Discuss birth defects of the eye. Read relevant research article Use Digital Library	C2 C2 C1 C1 C3 C3 C3	LGIS	MCQ SAQ VIVA
Development of Ear	Explain the development of otic placodes, otic pit, otic vesicle and otic capsule. Enlist derivatives of otic vesicle and otic capsule. Describe development of middle ear cavity and Eustachian tube from tubotympanic recess. Describe the development of auditory ossicles, tympanic membrane and mastoid antrum. Discuss development of external acoustic meatus. Enlist commom congenital anomalies associated with ear development. Describe the embryological basis of these anomalies Read relevant research article Use Digital Library	C2 C1 C2 C2 C2 C3 C3 C3 C3	LGIS	MCQ SAQ VIVA
Histology				

Histology of Ear	Describe the structural differences between the outer, middle and inner ear. Discuss the functions of different parts of ear. Distinguish the auditory parts of the inner ear from the vestibular system. Discuss their roles in hearing and balance. Describe the function of sensory hair cells. Describe the appearance and function of the spinal ganglion. Read relevant research article Use Digital Library	C2 C2 C1 C2 C2 C2 C3 C3	LGIS	MCQ SAQ VIVA
Histology of Eye (1) (Fibrous & vascular coats)	Discuss the histology of different coats of the eyeball. Describe histological sections of sclera and cornea. Describe the histology of choroid, ciliary body and iris. Discuss histological sections of accessory structures of the eye. Discuss the histological details of lens chambers of eye ball and vitreous body Discuss the related clinical like glaucoma, cataract Read a relevant research article Use Digital Library	C2 C2 C2 C2 C3 C3 C3	LGIS	MCQ SAQ VIVA
Histology of Eye(II) (Retina and photoreceptors)	Describe layers of retina. Discuss retinal pigment epithelium. Discuss histology and functions of neuronal retina Describe Photoreceptors and Rod cells. Discuss the related clinical like retinal detachment Read relevant research article Use Digital Library	C2 C2 C2 C2 C3 C3 C3	LGIS	MCQ SAQ VIVA

Physiology Large Group Interactive Session (LGIS)

Topics	Learning Objectives	References	Learning Resources	Learning Domains	Learning Strategy	Assessment Tools
Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction	1. Explain the basic physiology of eye and its refractive surfaces 2. Discuss the physical principles of optics 3. Describe the mechanism of accommodation and its control 4. Describe the errors of refraction (Myopia, hyperopia, astigmatism and their correction by using different lens systems	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 09, Page 177,185) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 85 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Sensory Physiology (Chapter 10,Page 374-378) • Physiological Basis of Medical Practice by Best & Taylor's.13th Edition,Vision(Chapter 64,Page 1086) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 50, Page 627-635)	• https://www.britannica.com/science/human-eye • https://youtu.be/laEFdlxW0rA	1.C2 2. C2 3. C2 4.C2	LGIS	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
Introduction to Physiology of external ear, Middle ear	1.Describe physiology of external ear 2.Describe physiology of middle ear 3. Explain structure of middle ear	• Ganong's Review of Medical Physiology.25TH Edition.Section 02, (Chapter 10, Page 199) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 92 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Sensory Physiology (Chapter 10,Page 364-371)	• https://youtu.be/VRLm7cpmZSk • https://www.sciencedirect.com/science/article/pii/S0378595522002192	1. C2 2. C2 3. C2	LGIS	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE

		• Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 53, Page 663)				
Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina	1.Describe the formation and circulation of aqueous humor 2.Explain the mechanism of regulation of intraocular pressure 3.Define glaucoma and its treatment	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 09, Page 178) • Physiological Basis of Medical Practice by Best & Taylor's.13th Edition,Vision(Chapter 64,Page 1094) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 50, Page 635) (Chapter 51,Page 639)	• https://youtu.be/CKtLlOSh8o4 • https://youtu.be/7CFY4gxLnMY • https://my.clevelandclinic.org/health/body/24611-aqueous-humor-vitreous-humor	1. C2 2. C2 3. C1	LGIS	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
Functions of Inner ear, Physiology of Hearing	1. Describe the physiology of hearing and function of tympanic membrane and ossicular system. 2. Define impendence matching and attenuation reflex 3. Explain the conduction of sound waves in the cochlea	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 10, Page 200,204) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 93 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.Sensory Physiology (Chapter 10,Page 371-374) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 53, Page 664,669)	1. https://youtu.be/Ie2j7GpC4JU 2. https://youtu.be/qgdqp-oPb1Q 3. https://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeID=90&ContentID=P02025	1. C2 2. C1 3. C2	LGIS	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
Photochemistry of vision &Physiological	1. Describe the physiology of retinal layers 2. Explain photochemistry of vision (rhodopsin - retinal)	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 09, Page 182)	1. https://www.brainkart.com/article/Photochemistry-of-Eye-	1. C2 2. C2 3. C2	LGIS	MCQ SEQ VIVA VOCE

basis for photo transduction	3. Describe the mechanism of activation of Rods 4. Explain the photochemistry of color vision	• Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 87 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.Sensory Physiology (Chapter 10,Page 379-387) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 51, Page 641)	Vision_19676/ 2. https://youtu.be/k9lrM5iPNuY	4. C2		MCQ (LMS based Aseessment, MST based Assessment) OSPE
Hearing abnormalities, Tuning fork tests and audiometry	1. Explain the auditory nervous pathway and abnormalities associated with it. 2. Describe the function of cerebral cortex in hearing.	• Physiological Basis of Medical Practice by Best & Taylor's.13th Edition(Chapter 62,Page 1067) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 53, Page 672)	1. https://youtu.be/FgF91K7dU8Y 2. https://youtu.be/acYMy9b0F2A 3. https://www.uptodate.com/contents/image?imageKey=PC%2F58032&topicKey=PC%2F15359&source=see_link	1. C2 2. C2	LGIS	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
Light & dark adaptation, Color vision, Neural functions of the retina, Central neurophysiology of vision, Neural pathways for analysis of visual information	1. Explain the neural circuitry of the Retina 2. Describe the physiology of visual pathway 3. Name the optic lesion associated with visual pathway	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 09, Page 189,193) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 90 • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 51, Page 644)(Chapter 52,Page 653-657)	**1.** https://youtu.be/wiYmTAuVimg 2. https://youtu.be/cG5ZuK0_qtc 3. https://teachmeanatomy.info/head/cranial-nerves/optic-cnii/	1.C2 2.C2 3.C1	LGIS	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE

Vestibular system	1. Describe the function of the organ of corti 2. Explain vestibular system	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 10, Page 209) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 95 • Physiological Basis of Medical Practice by Best & Taylor's.13th Edition,(Chapter 63,Page 1072)	1. https://www.physio-pedia.com/Vestibular_System 2. https://youtu.be/ryGMI3SpxCE 3. https://youtu.be/mcp7qLh8_5c	1. C2 2. C2	LGIS	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
Lesions of visual pathway and its effects on field of vision, Movements of eye ball along with neural control	1. Explain the muscular control of eye movement 2. Describe the fixation movements of eye 3. Define accommodation reflex and pupillary light reflex 4. Name the optic lesion associated with visual pathway	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 09, Page 190) • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.Sensory Physiology (Chapter 10,Page 374-378) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 52, Page 657)	1. https://youtu.be/evLyI35m8xU 2. https://teachmeanatomy.info/head/organs/eye/extraocular-muscles/	1. C2 2. C2 3. C2 4. C2	LGIS	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
Sense of Taste and pathophysiology	• List the primary sensation of taste • Explain the mechanism of taste perception and its transmission into central nervous system	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 11, Page 221) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 100 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.Sensory Physiology (Chapter 10,Page 361) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 54, Page 675-679)	1. https://youtu.be/K9JSBzEEA0o 2. https://youtu.be/mFm3yA1nslE 3. https://www.sciencedirect.com/topics/nursing-and-health-professions/taste	1. C1 2. C2	LGIS	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE

Physiology of accommodation and clinical abnormalities	1. Define accommodation reflex and pupillary light reflex 2. Explain Clinical abnormalities associated with accommodation	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 09, Page 188) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 52, Page 660)	1. https://youtu.be/xj0blrAx3_s 2. https://teachmephysiology.com/nervous-system/ocular-physiology/ocular-accommodation/	1. C1 2. C2	LGIS	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
Sense of Smell and pathophysiology	1. List the primary sensation of smell 2. Describe the stimulation of olfactory cells and its transmission into central nervous system	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 11, Page 217) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 98 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.Sensory Physiology (Chapter 10,Page 358) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 54, Page 679)	1. https://www.alimentarium.org/en/fact-sheet/senses-smell 2. https://youtu.be/mFm3yA1nslE	3. C1 4. C2	LGIS	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE

Biochemistry Large Group Interactive Session (LGIS)

Topic	Learning Objectives At The End Of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Receptors and their classification	Define receptors. Classify Receptors	C1 C2	LGIS	MCQs, SAQs& Viva
Signal transduction G proteins	Explain the structure and function of G proteins	C2	LGIS	MCQs, SAQs & Viva
Signal transduction Second messenger system	Describe different types of second messengers	C2	LGIS	MCQs, SAQs & Viva
Neurotransmitters	Explain synthesis & functions of neurotransmitters. Discuss related clinical disorders	C2 C3	LGIS	MCQs, SAQs & Viva
Role of vitamin A in vision	Explain the role of vitamin A in vision. Discuss related clinical abnormalities	C2 C3	LGIS	MCQs, SAQs & Viva

Anatomy Small Group Discussion (SGDs)

Topics	At the end of lecture students should be able to:	Learning Domains	Teaching Strategy	Assessment Tools
Facial & Superior Aspect of Cranium (Norma Frontalis & Verticalis.)	• Define boundaries of Norma frontalis and verticalis.	C1	Skills Lab	MCQ SAQ VIVA
	• Enumerate their muscle attachment.	C1		
	• Describe and features of its structure	C2		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
External Surface of Cranial Base (Norma Basalis)	• Describe bones forming the base of skull	C2	Skills Lab	MCQ SAQ VIVA
	• Explain the details of anterior, middle and posterior part of base of skull	C2		
	• Identify different foramina and structures passing through them.	C1		
	• Explain the attachments and relations of base of skull.	C2		
	• Fracture of cranial base	C2		
	• Head injuries and intracranial haemorrhage	C3		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
Lateral & Occipital Aspect of Cranium (Norma Lateralis. & Occipitalis)	• Enlist various bones in normal lateralis. Describe the cranial and facial subdivision. Define external acoustic meatus,	C1	Skills Lab	MCQ SAQ VIVA
	• Discuss attachments of mastoid and styloid process.	C2		
	• Explain the boundaries of Norma occipitalis.	C2		
	• Identify different foramina and structures passing through them at the base.	C1		
	• Explain its attachments and relations.	C2		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
Mandible	• Describe the anatomical features of mandible	C2	Skills Lab	MCQ SAQ VIVA
	• Describe parts of mandible	C2		
	• Explain structural features of each part	C2		
	• Enlist attachments of each part	C1		
	• Describe blood and nerve supply of mandible.	C2		
	• Interpret applied anatomy of mandible.	C3		

	• Read relevant research article	C3		
	• Use digital libaray	C3		
Temporomandibular joint (TMJ)	• Discuss the temporomandibular joint, its type, formation and neurovascular supply.	C2	Skills Lab	MCQ SAQ VIVA
	• Describe the movement's axis and muscles involved.	C2		
	• Correlate clinically disorders of the temporo- mandibular joint.	C3		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
Face	• Discuss limits of face.	C2	Skills Lab	MCQ SAQ VIVA
	• Tabulate the muscles of face. (Superficial and deep) origin, insertion, nerve supply and action.	C2		
	• Discuss their role in facial expression.	C2		
	• Describe facial nerve palsy upper and lower motor neuron.	C3		
	• Discuss nerve supply of face.	C1		
	• Discuss superficial and deep vasculature of face.	C1		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
Scalp and temple	• Explain the extent of scalp	C2	Skills Lab	SAQ VIVA
	• Describe the Scalp layers, nerves &vessels	C2		
	• Discuss the clinical correlates like scalp injuries and scalp wounds.	C2		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
Orbit	• Discuss its location, surfaces and borders	C2	Skills Lab	MCQ SAQ VIVA
	• Describe its muscular and ligamentous attachment.	C2		
	• Describe eyeball movements in relation to recti and oblique muscles.	C2		
	• Discuss role of levator palpebrae superioris	C2		
	• Discuss clinical correlations of different coats of eyeball.	C2		
	• Explain extent and subdivisions of pharynx	C2		
	• Read relevant research article	C3		
	• Use digital libaray	C3		

Eyeball	• Describe anatomy of eyeball with suspensory apparatus.	C2	Skills Lab	MCQ SAQ VIVA
	• Discuss different coats of eyeball with their nerve and blood supply.	C2		
	• Discuss refractive media and compartments of eyeball.	C2		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
Eyelid & lacrimal app	• Discuss the different components of lacrimal apparatus	C2	Skills Lab	MCQ SAQ VIVA
	• Describe the lacrimal gland and its neurovascular supply	C2		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
Parotid & Temporal Region	• Describe boundaries of parotid region.	C2	Skills Lab	MCQ SAQ VIVA
	• Discuss surfaces, innervation and relations of parotid gland.	C2		
	• Understand the bio-physiological aspects of arches	C2		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
Infra temporal Fossa	• Discuss the boundaries and contents of temporal region.	C2	Skills Lab	MCQ SAQ VIVA
	• Describe the temporalis muscle and its relations	C2		
	• Enumerate the boundaries and contents of infratemporal region.	C1		
	• Discuss muscles of mastication	C2		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
Pterygopalatine Fossa	• Discuss the boundaries and contents of pterygopalatine fossa.	C2	Skills Lab	MCQ SAQ VIVA
	• Discuss the communications of pterygopalatine fossa.	C2		
	• Understand the bio-physiological aspects of arches	C2		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
External & Midal Ear	• Describe parts of the ear.	C2	Skills Lab	MCQ SAQ VIVA
	• Discuss walls and contents of external and middle ear ,	C2		
	• Discuss their blood and nerve supply.	C2		
	• Explain pharyngo tympanic tube, mastoid antrum and air cells.	C2		
	• Relation of chorda tympani and facial nerve.	C1		
	• Discuss Mastoiditis and tubal blockage	C3		
	• Read relevant research article	C3		
	• Use digital libaray	C3		

Inner Ear	• Discuss membranous and bony labyrinth.	C2	Skills Lab	MCQ SAQ VIVA
	• Describe internal acoustic meatus.	C2		
	• Explain the course of 7th and 8th cranial nerve in detail.	C2		
	• Read relevant research article	C3		
	• Use digital libaray	C3		
Nose & Paranasal Sinuses	• Discuss anatomy and location of paranasal air sinuses separately.	C2	Skills Lab	MCQ SAQ VIVA
	• Define & list names of paranasal sinuses	C1		
	• Describe their blood and nerve supply	C2		
	• Describe functions of paranasal sinuses.	C2		
	• Discuss drainage of paranasal sinuses.	C2		
	• Identify carious sinuses in radiographs	C1		
	• Describe anatomy of external nose and features of of nasal septum, side and anatomical position.	C2		
	• Describe details of olfactory receptors and formation of olfactory nerve.	C2		
	• Discuss blood and nerve supply of external nose and nasal septum.	C2		
	• Explain functions of nose.	C2		
	• Discuss in detail clinical correlates of external nose and nasal septum. Lateral nasal wall and their importance.	C2		
	• Discuss on clinical importance of nasal cavity.	C3		
	• Read relevant research article	C3		
	• Use digital libaray	C3		

Physiology Small Group Discussion (SGDs)

Topics	Learning Objectives	References	Learning Resources	Learning Domains	Learning Strategy	Assessment Tools
Physiology of Vision	1. Explain the basic physiology of eye and its refractive surfaces 2. Discuss the physical principles of optics 3. Describe the mechanism of accommodation and its control 4. Describe the errors of refraction (Myopia, hyperopia, astigmatism and their correction by using different lens systems	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 09, Page 177,185) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 85 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Sensory Physiology (Chapter 10,Page 374-378) • Physiological Basis of Medical Practice by Best & Taylor's.13th Edition,Vision(Chapter 64,Page 1086) Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 50, Page 627-635)	1. https://www.britannica.com/science/human-eye 2. https://youtu.be/laEFdlxW0rA	1.C2 2. C2 3. C2 4.C2	SGD	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE
Physiology of Hearing	1. Describe the physiology of hearing and function of tympanic membrane and ossicular system. 2. Define impendence matching and attenuation reflex 3. Explain the conduction of sound waves in the cochlea	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 10, Page 200,204) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 93 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.Sensory Physiology (Chapter 10,Page 371-374) Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 53, Page 664,669)	1. https://youtu.be/Ie2j7GpC4JU 2. https://youtu.be/qgdqp-oPb1Q 3. https://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeID=90&ContentID=P02025	1. C2 2. C1 3. C2	SGD	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE

Sense of Taste and Smell	1. List the primary sensation of taste 2. Explain the mechanism of taste perception and its transmission into central nervous system 3. List the primary sensation of smell 4. Describe the stimulation of olfactory cells and its transmission into central nervous system	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 11, Page 221) (Chapter 11, Page 217) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 100 , chapter 3, page 98 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.Sensory Physiology (Chapter 10,Page 361) (Chapter 10,Page 358) Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 54, Page 675-679) . (Chapter 54, Page 679)	1. https://youtu.be/K9JSBzEEA0o 2. https://youtu.be/mFm3yA1nslE 3. https://www.sciencedirect.com/topics/nursing-and-health-professions/taste 4. https://www.alimentarium.org/en/fact-sheet/senses-smell 5. https://youtu.be/mFm3yA1nslE	1.C1 2.C2 3.C1 4.C2	SGD	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE

Biochemistry Small Group Discussion (SGDs)

Topic	Learning Objectives At The End Of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Receptors & G proteins	Explain different types of receptors and G proteins	C2	SGD	MCQs, SAQs& Viva
Role of vitamin A in vision	Explain the role of vitamin A in vision. Discuss related clinical abnormalities	C2 C3	SGD	MCQs, SAQs & Viva
Neurotransmitters	Discuss synthesis, functions & clinical significance of neurotransmitters	C2	SGD	MCQs, SAQs & Viva

Anatomy Self Directed Learning (SDL)

Topics	Learning objectives	Learning Resources
Norma Frontalis and Verticalis.	• Define boundaries of Norma frontalis and verticalis. • Enumerate their muscle attachment. • Describe and features of its structure • Read relevant research article • Use digital libaray	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 823-8291). • https://youtu.be/rr3-V7Qhf8E • https://youtu.be/35Y71cRBqs8
External Surface of Cranial Base Norma Basalis.	• Describe bones forming the base of skull • Explain the details of anterior, middle and posterior part of base of skull • Identify different foramina and structures passing through them. • Explain the attachments and relations of base of skull. • Fracture of cranial base • Head injuries and intracranial haemorrhage • Read relevant research article • Use digital libaray	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, P829-836). • https://youtu.be/6ZjJPLOJ0N8 • https://youtu.be/75lLaDFJTP4 • https://youtu.be/fteiKT_wQDE
Lateral & Occipital Aspect of Cranium Norma Lateralis. Norma Occipitalis	• Enlist various bones in normal lateralis. Describe the cranial and facial subdivision. • Define external acoustic meatus, • Discuss attachments of mastoid and styloid process. • Explain the boundaries of Norma occipitalis. • Identify different foramina and structures passing through them at the base. • Explain its attachments and relations. • Read relevant research article • Use digital libaray	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 827-829). • https://youtu.be/tkpzPMXzwiM • https://youtu.be/9Msvtw5CjFY
Mandible	• Define location of mandible • Describe parts of mandible • Explain structural features of each part • Enlist attachments of each part • Describe blood and nerve supply of mandible. • Interpret applied anatomy of mandible. • Read relevant research article	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Pae 827). • https://youtu.be/_lHosB-c_fQ • https://youtu.be/Qc0ysewMJg4

	• Use digital libaray	
Temporomandibular joint	• Discuss the temporomandibular joint, its type, formation, and neurovascular supply. • Describe the movement's axis and muscles involved. • Correlate clinically disorders of the temporo- mandibular joint. • Read relevant research article • Use digital libaray	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 916-920). • https://youtu.be/6tJsi5oghNY • https://youtu.be/0BKU04QLzV0
Orbit	• Discuss its location, surfaces and borders • Describe its muscular and ligamentous attachment. • Describe eyeball movements in relation to recti and oblique muscles. • Discuss role of levator palpebrae superioris • Discuss extraocular muscles of orbit. • Supporting appratus of eyeball. • Nerves of eye ball • Vasculature of orbit • Read relevant research article • Use digital libaray	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 889-906). • https://youtu.be/HKEA4p5k66U • https://youtu.be/Oz4kGGiJNrA
Temporal Region	• Describe boundaries of parotid region. • Discuss surfaces, innervation and relations of parotid gland. • Understand the bio-physiological aspects of arches • Read relevant research article • Use digital libaray	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 914-916). • https://youtu.be/HB6bN-rs2NU • https://youtu.be/zo7DDK-h1Mg
Infra temporal Fossa	• Discuss the boundaries and contents of temporal region. • Describe the temporalis muscle and its relations • Enumerate the boundaries and contents of infratemporal region. • Discuss muscles of mastication • Read relevant research article • Use digital libaray	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 916-926). • https://youtu.be/z2GlluoOtMY • https://youtu.be/ixCCX46XWHA
Pterygopalatine Fossa	• Discuss the boundaries and contents of pterygopalatine fossa. • Discuss the communications of pterygopalatine fossa. • Understand the bio-physiological aspects of arches • Read relevant research article	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 951-954) • https://youtu.be/9taW-Th3ycc • https://youtu.be/o_JbDynMZjo

	• Use digital libaray	
External & Midal Ear	• Describe parts of the ear. • Discuss walls and contents of external and middle ear , • Discuss their blood and nerve supply. • Explain pharyngo tympanic tube, mastoid antrum and air cells. • Relation of chorda tympani and facial nerve. • Discuss Mastoiditis and tubal blockage • Read relevant research article • Use digital libaray	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 966-973). • https://youtu.be/VRLm7cpmZSk • https://youtu.be/unDpXRE_PPA

Physiology Self Directed Learning (SDL)

Topics Of SDL	Learning Objective	References	Learning Resources	Learning Domains	Learning Strategy	Assessment Tools
ON CAMPUS Introduction to Physiology of external ear, Middle ear	1.Describe physiology of external ear 2.Describe physiology of middle ear 3. Explain structure of middle ear	• Ganong's Review of Medical Physiology.25TH Edition.Section 02, (Chapter 10, Page 199) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 92 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Sensory Physiology (Chapter 10,Page 364-371) ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 53, Page 663)	1. https://youtu.be/VRLm7cpmZSk **2.** https://www.sciencedirect.com/science/article/pii/S0378595522002192	1. C2 2. C2 3. C2	SDL	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE SDL Evaluation
Functions of Inner ear, Physiology of Hearing	1.Describe the physiology of hearing and function of tympanic membrane and ossicular system. 2.Define impendence matching and attenuation reflex	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 10, Page 200,204) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 93	1. https://youtu.be/Ie2j7GpC4JU 2. https://youtu.be/qgdqp-oPb1Q 3. https://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeI	1.C2 2.C1 3. C2	SDL	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment,

	3. Explain the conduction of sound waves in the cochlea	• Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.Sensory Physiology (Chapter 10,Page 371-374) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 53, Page 664,669)	D=90&ContentID=P02025			MST based Assessment) OSPE SDL Evaluation
Hearing abnormalities, Tuning fork tests and audiometry	1.Explain the auditory nervous pathway and abnormalities associated with it. 2. Describe the function of cerebral cortex in hearing.	• Physiological Basis of Medical Practice by Best & Taylor's.13th Edition(Chapter 62,Page 1067) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 53, Page 672)	1. https://youtu.be/FgF91K7dU8Y 2. https://youtu.be/acYMy9b0F2A 3. https://www.uptodate.com/contents/image?imageKey=PC%2F58032&topicKey=PC%2F15359&source=see_link	1.C2 2. C2	SDL	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE SDL Evaluation
OFF CAMPUS Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction	1. Explain the basic physiology of eye and its refractive surfaces 2. Discuss the physical principles of optics 3. Describe the mechanism of accommodation and its control 4. Describe the errors of refraction (Myopia, hyperopia, astigmatism and their correction by using different lens systems	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 09, Page 177,185) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 85 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. Sensory Physiology (Chapter 10,Page 374-378) • Physiological Basis of Medical Practice by Best & Taylor's.13th Edition,Vision(Chapter 64,Page 1086) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 50, Page 627-635)	• https://www.britannica.com/science/human-eye https://youtu.be/laEFdlxW0rA	1.C2 2. C2 3. C2 4.C2	SDL	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE SDL Evaluation
Fluid system of the eye Intraocular	1.Describe the formation and circulation of aqueous humor	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 09, Page 178)	• https://youtu.be/CKtLlOSh8o4	1. C2 2. C2 3. C1	SDL	MCQ SEQ VIVA VOCE

pressure, Function of the Structural Elements of the Retina	2.Explain the mechanism of regulation of intraocular pressure 3.Define glaucoma and its treatment	• Physiological Basis of Medical Practice by Best & Taylor's.13th Edition,Vision(Chapter 64,Page 1094) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 50, Page 635) (Chapter 51,Page 639)	• https://youtu.be/7CFY4gxLnMY • https://my.clevelandclinic.org/health/body/24611-aqueous-humor-vitreous-humor			MCQ (LMS based Aseessment, MST based Assessment) OSPE SDL Evaluation
Photochemistry of vision &Physiological basis for photo transduction	1. Describe the physiology of retinal layers 2. Explain photochemistry of vision (rhodopsin - retinal) 3. Describe the mechanism of activation of Rods 4. Explain the photochemistry of color vision	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 09, Page 182) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 87 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.Sensory Physiology (Chapter 10,Page 379-387) • Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 51, Page 641)	3. https://www.brainkart.com/article/Photochemistry-of-Eye-Vision_19676/ https://youtu.be/k9lrM5iPNuY	1. C2 2. C2 3. C2 4. C2	SDL	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE SDL Evaluation
Vestibular system	1. Describe the function of the organ of corti 2. Explain vestibular system	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 10, Page 209) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 95 Physiological Basis of Medical Practice by Best & Taylor's.13th Edition,(Chapter 63,Page 1072)	4. https://www.physio-pedia.com/Vestibular_System 5. https://youtu.be/ryGMI3SpxCE https://youtu.be/mcp7qLh8_5c	1. C2 2. C2	SDL	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE SDL Evaluation

Sense of Taste and pathophysiology	1. List the primary sensation of taste 2. Explain the mechanism of taste perception and its transmission into central nervous system	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 11, Page 221) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 100 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.Sensory Physiology (Chapter 10,Page 361) Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 54, Page 675-679)	3. https://youtu.be/K9JSBzEEA0o 4. https://youtu.be/mFm3yA1nslE 5. https://www.sciencedirect.com/topics/nursing-and-health-professions/taste	1.C1 2. C2	SDL	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE SDL Evaluation
Sense of Smell and pathophysiology	1. List the primary sensation of smell 2. Describe the stimulation of olfactory cells and its transmission into central nervous system	• Ganong's Review of Medical Physiology.25TH Edition.Section 02,Vision (Chapter 11, Page 217) • Physiology by Linda S. Costanzo 6th Edition,Neurophysiology chapter 3, page 98 • Human Physiology by Dee Unglaub Silver thorn. 8TH Edition.Sensory Physiology (Chapter 10,Page 358) Textbook of Medical Physiology by Guyton & Hall.14th Edition..Section 10. (Chapter 54, Page 679)	6. https://www.alimentarium.org/en/fact-sheet/senses-smell 7. https://youtu.be/mFm3yA1nslE	1.C1 2.C2	SDL	MCQ SEQ VIVA VOCE MCQ (LMS based Aseessment, MST based Assessment) OSPE SDL Evaluation

Biochemistry Self Directed Learning (SDL)

Topics Of SDL	Learning Objectives	Learning resources
Neurotransmitter	• Explain synthesis & functions of neurotransmitters • Discuss related clinical disorders	• Lippincott Illustrated reviews of biochemistry 8th edition (Chapter 13, 21 page 166 & 317 - 319) • Use digital library • https://www.youtube.com/watch?v=wtcZt6VA4y8 • https://www.youtube.com/watch?v=ijLdLjl_wTQ
Receptors	• Define receptors • Classify Receptors	• Text book of Biochemistry Lehninger 8th edition (Chapter 12, page 439- 440) • Use digital library • https://www.youtube.com/watch?v=lkEvLrlPj-U • https://www.youtube.com/watch?v=RkFVViTuHbY
G - Proteins	• Explain the structure and function of G proteins	• Harper's Illustrated Biochemistry 32th edition (Chapter 42, page 503 – 505) • Use digital library • https://www.youtube.com/watch?v=Glu_T6DQuLU • https://www.youtube.com/watch?v=N7o0Fkz9iGE
Role of Vitamin A in Vision	• Explain the role of vitamin A in vision • Discuss related clinical abnormalities	• Lippincott Illustrated reviews of biochemistry 8th edition (Chapter 28, page 433-434) • Use digital library • https://www.youtube.com/watch?v=HG5BfsaoiE0 • https://www.youtube.com/watch?v=AKR1g4aHNb4
Second Messenger System	• Describe different types of second messengers	• Lippincott Illustrated reviews of biochemistry 8th edition (Chapter 8, page 103- 105) • Harper's Illustrated Biochemistry 32th edition (Chapter 42, page 506 – 509) • Use digital library • https://www.youtube.com/watch?v=PzA5Z3DXfrQ • https://www.youtube.com/watch?v=aIZQ3ker0KE

Histology Practicals Skill Laboratory (SKL)

Topics	At The End Of Demonstration Student Should Be Able To	Learning Domains	Teaching Strategy	Assessment Tools
Cornea	• Identify the histological slide cornea. • Illustrate the microscopic picture of Ccornea. • Enlist two points of identification of each • Read a relevant research article • Use digital library	P C2 C1 C3 C3	Skill Lab	OSPE
Retina	• Identify the histological slide of retina. • Illustrate the microscopic picture of retina • Enlist two points of identification • Read a relevant research article • Use digital library	P C2 C1 C3 C3	Skill Lab	OSPE
Ear	• Identify the histological slide of ear • Illustrate the microscopic picture of ear • Enlist two points of identification of each • Read a relevant research article • Use digital library	P C2 C1 C3 C3	Skill Lab	OSPE

Physiology Practicals Skill Laboratory (SKL)

Topic	Learning Objectives	Reference	Learning Domains	Learning Strategy	Assessment Tools
Estimation of Visual Acuity	• Apparatus identification • Principle • Procedure • Precautions • Recall normal value of visual acuity • Use of Snellen's chart & jaeger's chart • Recall the different Errors of refraction	Practical Notebook of Physiology First year MBBS by Dr Saqib Sohail	P C1 P C1 C1 P C1	Practicals/ skill lab	Viva Voce Ospe Video Assissted Assessment
Examination of 8th Cranial Nerve (vestibular function)	• Apparatus identification • Principle • Procedure • Precautions • Use various hearing tests & interpretation of their results • Recall deafness, its types & causes	Practical Notebook of Physiology First year MBBS by Dr Saqib Sohail	P C1 P C1 C1 C1	Practicals/ skill lab	Viva Voce Ospe Video Assissted Assessment
Performance of Hearing Test (cochlear function)	• Apparatus identification • Principle • Procedure • Precautions • Use various hearing tests & interpretation of their results • Recall deafness, its types & causes	Practical Notebook of Physiology First year MBBS by Dr Saqib Sohail	P C1 P C1 C1 C1	Practicals/ skill lab	Viva Voce Ospe Video Assissted Assessment

Biochemistry Practicals Skill Laboratory (SKL)

Topic	Learning Objectives At The End Of Practical Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Urine report revision	Write and interpret urine report	P	Skill Lab	OSPE
Lipid Profile	Write and interpret lipid profile	P	Skill Lab	OSPE
Spectrophotometer	Understand principle and uses of spectrophotometer	P	Skill Lab	OSPE

SECTION - III

Basic and Clinical Sciences (Vertical Integration)

Content

- **CBLs**
- **Vertical Integration LGIS**
- **Longitudinal Themes**
    - **Biomedical Ethics & Professionalism**
    - **Family Medicine**
    - **Artificial Intelligence (Innovation)**
    - **Integrated Undergraduate Research Curriculum (IUGRC)**

Case Based Learning Objectives (CBL)

Subjects	Topics	At the end of the session the student should be able to	Learning Domains
Anatomy	• Extra dural Haemorrhage (Norma lateralis & occipitalis)	Apply basic knowledge of subject to study clinical case.	C3
	• Occulo Motor nerve palsy (Extra ocular muscles)	Apply basic knowledge of subject to study clinical case.	C3
Biochemistry	• Night Blindness	Apply basic knowledge of subject to study clinical case.	C3

Vertical Integration LGIS

Pharmacology

Topic	At The End Of Lecture, Students Should Be Able To:	Learning Domain	Teaching Strategy	Assessment Tools
Anti glaucoma drugs	• Recall the process of production and drainage of aqueous humor	C1	LGIS	MCQ
	• Outline the range of normal IOP	C1		
	• Enumerate main drug groups used in treatment of glaucoma	C1		
	• Briefly discuss IOP lowering mechanism of main groups	C2		

Medicine

Topic	At The End Of Lecture, Students Should Be Able To:	Learning Domain	Teaching Strategy	Assessment Tools
Management Of Covid-19 Sense of Smell	• Discuss pathophysiology, signs and symptoms of patients with COVID-19.	C2	LGIS	MCQ
	• Discuss How will you investigate the patient with COVID-19.	C2		
	• Explain the management of COVID-19.	C2		

Sugery

Topic	At The End Of Lecture, Students Should Be Able To:	Learning Domain	Teaching Strategy	Assessment Tools
Plastic surgery	• Introduction to Plastic Surgery	C2	LGIS	MCQ
Burn	• Define Burn	C1	LGIS	MCQ
	• Types of Burns	C2		
	• Classification of Burns			
	• Percentages of Burn			
Burn Managment	• Approach toward Burn patient?	C1	LGIS	MCQ
	• Physiological changes because of Burn	C2		
	• Importance of Fluid Management in burn			
Foot Ulcer	• Classify Foot Ulcer	C1	LGIS	MCQ
	• Differentiate among Venous/Arterial /Traumatic and Diabetic Ulcer	C2		
	• Grading of Diabetic foot ulcers	C3		
Skin ulcer	• Classify Skin Ulcers	C1	LGIS	MCQ
	• Differentiate between marjolin ulcer, basal cell carcinoma and squamous cell carcinoma	C2	LGIS	MCQ

Peadiatrics

Topic	At the End Of Lecture, Students Should Be Able To:	Learning Domain	Teaching Strategy	Assessment Tools
Preventive Pediatrics	• Classify the degree of malnutrition in a malnourished child	C1	LGIS	MCQs
	• Differentiate between clinical features of kwashiorkor and marasmus on a patient	C2	LGIS	MCQs

Radiology

Topic	At The End Of Lecture, Students Should Be Able To:	Learning Domain	Teaching Strategy	Assessment Tools
General radiologic concepts	• Categorize different tissues from most to least opaque on x-ray including bone, soft tissue, air, metal, and fat.	C2	LGIS	MCQs

ENT

Topic	At The End Of Lecture, Students Should Be Able To:	Learning Domain	Teaching Strategy	Assessment Tools
Deafness	• Know various cases of deafness	C1	LGIS	MCQs,
	• Understand the etiology, Pathology of various cases of deafness in external middle and internal ear and to know how to treat them.	C2		
DNS & Rhinitis	• Should define the turns	C1	LGIS	MCQs,
	• Know various causes of DNS and Rhinitis	C1		
	• Must be able to know treatment of all.	C1		
Nasal polyp	• Know definition of polyp	C1	LGIS	MCQs,
	• Know different types of nasal Polyps, their etiology, pathophysiology and treatment	C1		
	• Know latest management	C1		
Diseases of External Nose	• Know various diseases of external nose, their etiology	C1	LGIS	MCQs,
	• Pathophysiology and know how to treat them	C1		
Ear Discharge	• Know Various cases of ear discharge	C1	LGIS	MCQs,
	• Understand the etiology, Pathology of various cases of ear discharge in external and middle ear.	C2		
	• Know how to treat these causes.	C1		

Dizziness and Vertigo.	• Recognise signs and symptoms of acoustic neuroma. • Identify treatment options and risks	C1 C2	LGIS	MCQs,
Facial fractures	• Classify facial fractures • Enumerate treatment options for facial fractures	C1 C2	LGIS	MCQs,
Sinusitis	• Classify Sinusitis • Enlist clinical features of sinusitis.	C1 C2	LGIS	MCQs,
Hearing Problems in Children	• Define deafness • State the aetiology of hearing loss • Elaborate the types of hearing loss • Discuss the investigations of hearing loss • Describe the treatment options for hearing loss patients.	C1 C1 C1 C2 C2	LGIS	MCQs,

Eye

Topic	At The End Of Lecture, Students Should Be Able To:	Learning Domain	Teaching Strategy	Assessment Tools
Refractive Errors	Refractive Errors	C1	LGIS	MCQs,
	• Types			
	• Treatment			
	ColourVison			
	• Types			
	• Inheritence			
	• Gender Predisposition			
	Night Blindness	C1		
	• Etiology			
	• Treatment			
Glaucoma	Glaucoma	C1	LGIS	MCQs,
	• What is Glaucoma			
	• Classification			
	• Treatment			

Cataract	Cataract	C1	LGIS	MCQs,
	• Define			
	• Types of cataract			
	• Surgical procedures			
Ocular trauma & Ocular Procedures	Ocular Trauma	C1	LGIS	MCQs,
	• Blunt			
	• Penetrating			
	• Chemical Burns			
	• Laceration			
	Ocular Procedures	C1		
	• Cataract surgeries			
	• Glaucoma Surgeries			
	• Laser And refractive Surgeries			
Cornea	Corneal Ulcer	C1	LGIS	MCQs,
	• Bacterial			
	• Viral			
	• Fungal			
Conjunctivitis	• Define conjunctivitis	C1	LGIS	MCQs,
	• Discuss the causes & types			
	• Explain management in detail			

Behavioural Sciences

Topic	At The End Of Lecture, Students Should Be Able To:	Learning Domain	Teaching Strategy	Assessment Tools
Perception	• To be able to define perception and basic perceptual abilities. • To identify abnormalities of perceptions and their role in disease causation	C2	LGIS	MCQs,
Sleep and arousal	• To be able to understand the physiology of sleep. Disorders of sleep and their management	C2	LGIS	MCQs,

Family Medicine

Topic	At the End of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Approach to a patient with earache	• Define earache.	C1	LGIS	MCQs
	• Discuss various types of earache.	C2		
	• Discuss the signs and symptoms of a patient with earache.	C2		
	• Discuss the workup for diagnosis of different types of earache.	C2		
	• Discuss management of Various types of earache.	C2		
	• Appreciate approach to a patient with earache.	C3		

Biomedical Ethics & Professionalism

Topics	At the end of session students should be able to:	Learning Domains	Teaching Strategy	Assessment Tools
Ethical dilemmas practice involving breach in principle of justice	• Analyze ethical dilemmas in healthcare practice involving breach in principle of justice. • Explain what procedures adopted to maintain the principle of justice in challenging situations. • Identify situations in which a doctor may have to take decisions in the best interests of the patient considering the principle of justice	C3 C2 C1	Short video demonstration on violation of Ethical principle of beneficence and non-maleficence from suit CBEC Video resources Students' deliberations and reflections Reflective writing	• Assignment based assessment involving real life case scenarios under aggregate Marks. (Internal Assessment) • Assignment to be uploaded on LMS

Integrated Undergraduate Research Curriculum (IUGRC)

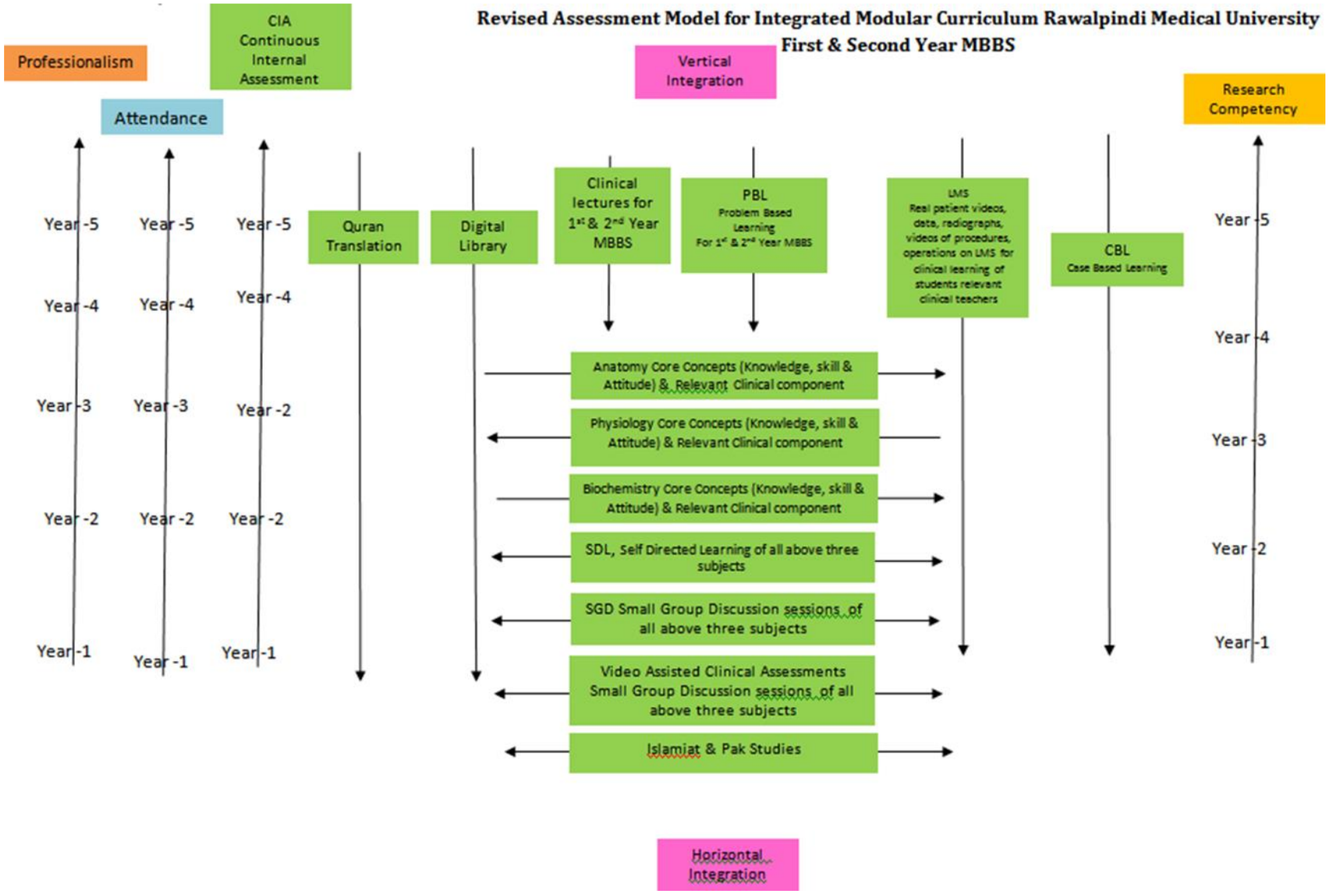
Topics	At the end of the session the student should be able to:	Learning Domains	Teaching Strategy	Assessment Tool
How to write a report /manuscript Writing	• How to write a report /manuscript	C3	Activity	MCQs

SECTION - IV

Assessment Policies

Contents

- **Assessment plan**
- **Types of Assessment:**
- **Modular Examinations**
- **Block Examination**
- **Table 4: Assessment Frequency & Time in Special Senses Module**



Gauge for Continuous Internal Assessment (CIA)

Red Zone	High Alert	Yellow Zone	Green Zone	Excellent	Extra Ordinary
0 - 25%	26 - *50%	51 - 60%	61 – 70%	71 – 80%	81 - 100%

*50% and above is Passing Marks.

Gauge for attendance percentage

Red Zone	High Alert	Yellow Zone-1	Yellow Zone-2	Green Zone	Excellent
0 - 25%	26 - 50%	51 - 60%	61 – 74%	*75 – 80%	81 - 100%

90% is eligibility criteria for appearing in professional examination.

Assessment plan

University has followed the guidelines of Pakistan Medical and Dental Council for assessment. Assessment is conducted at the mid modular,modular and block levels.

Types of Assessment:

The assessment is formative and summative.

Formative Assessment	Summative Assessment
Formative assessment is taken at modular (2/3rd of the module is complete) level through MS Teams. Tool for this assessment is best choice questions and all subjects are given theshare according to their hour percentage.	Summative assessment is taken at the mid modular (LMS Based),modular and block levels.

Modular Assessment

Theory Paper	Viva Voce
There is a module examination at the end of first module of each block. The content of the whole teaching of the module are tested in this examination. It consists of paper with objective type questions and structured essay questions. The distribution of the questions is based on the Table of Specifications of the module. (Annexure I attached)	Structured table viva voce is conducted including the practical content of the module.

Block Assessment

On completion of a block which consists of two modules, there is a block examination which consists of one theory paper and a structured viva with OSPE.

Theory Paper	Block OSPE
There is one written paper for each subject. The paper consists of objective type questions and structured essay questions. The distribution of the questions is based on the Table of Specifications of the module.	This covers the practical content of the whole block.

Table 4-Assessment Frequency & Time in Special Senses Module

Block	Sr #	Module Special Senses Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block-I	1	Mid Module Examinations LMS based (Anatomy, Physiology & Biochemistry)	Summative	30 Minutes	3 Hour 15 Minutes	45 Minutes	2 Formative	6 Summative
	2	Topics of SDL Examination on MS Team	Formative	30 Minutes				
	3	End Module Examinations (SEQ & MCQs Based)	Summative	2 Hours				
	4	Anatomy Structured and Clinically Oriented Viva	Summative	10 Minutes				
	5	Physiology Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	6	Assessment of Clinical Lectures	Formative	15 Minutes				
	7	Assessment of Bioethics Lectures	Summative	2 Minutes				
	8	Assessment of IUGRC Lectures	Summative	10 Minutes				

Learning Resources

Subject	Resources
Anatomy	**A. Gross Anatomy** 1. Gray's Anatomy by Prof. Susan Standring 42th edition, Elsevier. 2. Clinical Anatomy for Medical Students by Richard S. Snell 10th edition. 3. Clinically Oriented Anatomy by Keith Moore 9th edition. 4. Cunningham's Manual of Practical Anatomy by G.J. Romanes, 16th edition, Vol-I, II and III **B. Histology** 1. B. Young J. W. Health Wheather's Functional Histology 6th edition. 2. Medical Histology by Prof. Laiq Hussain 7th edition. **C. Embryology** 1. Keith L. Moore. The Developing Human 11th edition. 2. Langman's Medical Embryology 14th edition. **D. Website** 1. https://my.clevelandclinic.org/health/articles/9117-male-reproductive-system 2. https://teachmeanatomy.info/pelvis/female-reproductive-tract/ 3. https://www.kenhub.com/en/start/pelvis-and-perineum **E. Youtube** 1. https://www.youtube.com/watch?v=G0ZuCilCu3E 2. https://www.youtube.com/watch?v=50iuBgTQCrQ **F. HEC Digital Library** 1. https://www.sciencedirect.com/science/article/pii/S0015028220304350 2. https://link.springer.com/article/10.1007/s11356-021-16581-9 3. https://link.springer.com/chapter/10.1007/978-3-030-30766-0_25 4. https://onlinelibrary.wiley.com/doi/abs/10.1111/and.13712
Physiology	**A. Textbooks** 1. Textbook of Medical Physiology by Guyton and Hall 14th edition. 2. Ganong 'S Review of Medical Physiology 26th edition. **B. Reference Books** 1. Human Physiology by Lauralee Sherwood 10th edition. 2. Berne & Levy Physiology 7th edition. 3. Best & Taylor Physiological Basis of Medical Practice 13th edition. 4. Guyton & Hall Physiological Review 3rd edition. **C. Website** **1.** https://teachmephysiology.com/reproductive-system/ (Reproductive physiology)

	2. https://courses.lumenlearning.com/wm-biology2/chapter/the-ovarian-cycle-the-menstrual-cycle-and-menopause/ 3. https://zerotofinals.com/obgyn/reproductivesystem/physiologyinpregnancy/ https://www.ibbiotech.com/en/info/sperm-capacitation/ **D. Youtube** 1. https://youtu.be/2_owp8kNMus (Female Reproductive system) 2. https://youtu.be/V9a2AQSJIMc (Dr Najeeb Lectures) https://youtu.be/rYVGjbzmAtg (Dr Najeeb lectures) **E. HEC Digital Library** 1. https://www.sciencedirect.com/science/article/abs/pii/S1532045621000296 2. https://www.sciencedirect.com/science/article/abs/pii/S001502822200485X **F. Physiology Journals** 1. https://rupress.org/jgp/article/5/4/441/30794/THE-RATE-OF-DECLINE-OF-MILK-SECRETION-WITH-THE 2. https://www.annualreviews.org/doi/abs/10.1146/annurev.ph.36.030174.001515?journalCode=physiol 3. https://zerotofinals.com/obgyn/reproductivesystem/physiologyinpregnancy/ https://www.msdmanuals.com/home/women-s-health-issues/normal-pregnancy/stages-of-development-of-the-fetus
Biochemistry	**Textbooks** 1. Harper's Illustrated Biochemistry 32th edition. 2. Lipponcott biochemistry 8th edition **B. Reference Books** 1.Lehninger Principle of Biochemistry 8th edition. 2. Biochemistry by Devlin 7th edition. **C. Website** • https://www.sciencedirect.com/topics/biochemistry-genetics-and-molecular-biology/gonad-function • https://www.sciencedirect.com/topics/biochemistry-genetics-and-molecular-biology/gonad-functionn • https://www.sciencedirect.com/topics/biochemistry-genetics-and-molecular-biology/purine-synthesis • https://www.sciencedirect.com/topics/medicine-and-dentistry/purine-metabolism-disorder • https://www.cliffsnotes.com/study-guides/biology/biochemistry-ii/purines-and- • https://www.healio.com/hematology-oncology/learn-genomics/genomics-primer/regulation-of-gene-expression-in-eukaryote **D. Youtube**

	• https://www.youtube.com/watch?v=A5u_TY1A0t8 • https://www.youtube.com/watch?v=A5u_TY1A0t8 • https://www.youtube.com/watch?v=VXWyWzbigrg • https://www.youtube.com/watch?v=e2KFVvI8Akk • https://www.youtube.com/watch?v=n7Uec8Jtr4E • https://www.youtube.com/watch?v=J9jhg90A7Lw **E. HEC Digital Library** • https://www.ncbi.nlm.nih.gov/books/NBK29/ • https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3243375/ • https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4215161/ • https://www.ncbi.nlm.nih.gov/pmc/articles/PMC378357/ • https://www.nature.com/scitable/topicpage/regulation-of-transcription-and-gene-expression-in-1086/ **F. Biochemistry Journals** • https://academic.oup.com/bmb/article/11/2/126/256755 • https://www.sciencedirect.com/topics/medicine-and-dentistry/gonadal-hormone

SECTION - V

Time Table

Integrated Clinically Oriented Modular Curriculum for Second Year MBBS

Special Senses Module Time Table

Second Year MBBS

Session 2021-2022

Batch- 49

Special Senses Module Team

Module Name	:	Reproduction Module
Duration of module	:	04 Weeks
Coordinator	:	Dr. Rahat
Co-coordinator	:	Dr. Fareed Ullah
Reviewed by	:	Module Committee

Module Committee		
1.	Vice Chancellor RMU	Prof. Dr. Muhammad Umar
2.	Director DME	Prof. Dr. Rai Muhammad Asghar
3.	Convener Curriculum	Prof. Dr. Naeem Akhter
4.	Chairperson Anatomy & Dean Basic Sciences	Prof. Dr. Ayesha Yousaf
5.	Additional Director DME	Prof. Dr. Ifra Saeed
6.	Chairperson Physiology	Prof. Dr. Samia Sarwar
7.	Chairperson Biochemistry	Dr. Aneela Jamil
8.	Focal Person Anatomy Second Year MBBS	Prof. Dr. Ifra Saeed
9.	Focal Person Physiology	Dr. Sidra Hamid
10.	Focal Person Biochemistry	Dr. Aneela Jamil
11.	Focal Person Pharmacology	Dr. Zunera Hakim
12.	Focal Person Pathology	Dr. Asiya Niazi
13.	Focal Person Behavioral Sciences	Dr. Saadia Yasir
14.	Focal Person Community Medicine	Dr. Afifa Kulsoom
15.	Focal Person Quran Translation Lectures	Dr. Fahad Anwar

Module Task Force Team		
1.	Coordinator	Dr. Rahat (Senior Demonstrator of Biochemistry)
2.	DME Focal Person	Dr. Sidra Hamid (Assistant Professor of Physiology)
3.	Co-coordinator	Dr. Rahat (Senior Demonstrator of Biochemistry)
4.	Co-Coordinator	Dr. Fareed Ullah (Senoir Demonstrator of Physiology)
5.	Co-coordinator	Dr. Sadia Baqir (APWMO of Anatomy)

DME Implementation Team		
1.	Director DME	Prof. Dr. Rai Muhammad Asghar
2.	Implementation Incharge 1st & 2nd Year MBBS & Add. Director DME	Prof. Dr. Ifra Saeed
3.	Deputy Director DME	Dr Shazia Zaib
4.	Module planner & Implementation coordinator	Dr. Sidra Hamid
5.	Editor	Muhammad Arslan Aslam

Discipline wise Details of Modular Contents

Block	Subjects	Embryology	Histology	Histology Practical SKL. Lab.	Gross Anatomy	CBL	SDL
II	• Anatomy	• Development of Eye • Development of Pharyngeal arches • Development of Ear	• Histology of Eye • Histology of Ear	• Cornea • Retina • External and Internal ear	• Facial and superior aspect of cranium (Norma frontalis, Norma verticalis) • External surface of cranial base (Norma basalis) • Lateral and occipital aspect of cranium (Norma lateralis, occipitalis) • Mandible • Temporomandibular joint • Face • Scalp • Orbit boundaries and Extraocular muscles • Vessels and nerves of orbit • Eyeball • Eyelid and lacrimal apparatus • Parotid and temporal region • Infratemporal fossa • Pterygopalatine fossa • External and middle ear • Inner ear • Nose and paranasal sinuses	• Oculomotor nerve palsy • Extra Dural hemorrhage	• Norma frontalis, verticalis and basalis • Lateralis and occipitalis, TMJ & Mandible Orbit boundaries • Extraocular muscles • Vessels and Nerves of orbit • Temporal and Infra temporal region, Pterygopalatine fossa • External and middle ear
	• Physiology	• Physiology of Ear & Eye					
	• Biochemistry	• Receptors, Second messengers, Neurotransmitters, Vitamin A role in vision					
	• Biomedical Ethics / Professinalism	• Ethical dilemmas Involving breach in Justice					
	• Behavioral Sciences	• Perception					
	• Research Club Activity	• Synopsis writing					
	• Radiology & Artificial Intelligence	• General radiologic concepts					

	● Family Medicine	● Approach to a patient with earache
	● Vertical components	• The Holy Quran Translation Component
	● Vertical Integration	Clinically content relevant to Speical Senses module • Plastic surgery (Surgery) • Imaniat (Hadith) (Islamiayat) • Pakistan ki jughrafiyai ahmiyat aur difai haisiyat (Pak Studies) • Nasal polyp & Sinusitis & Diseases of External Nose (ENT) • Cataract & Glaucoma & Anti glaucoma drugs (Eye) • Conjunctivitis Chalazion (Eye) • Ocular trauma & Ocular Procedures (Eye) • Zimidaari aur taluqaat (Islamiayat) • Pakistan k hamsaya mumalik se taluqaat (Pak Studies) • Refractive Errors Strabismus (Eye) • Management Of Covid-19 Sense Of Smell (Medicine) • Otitis Media Ear Discharge &Hearing Problems in Children (ENT) • Facial fractures (ENT) • Uswa-e-hasna (Islamiayat) • Pakistan k qudrati wasail-maadniyaat (Pak Studies)

Categorization of Modular Contents

Anatomy

Category A*	Category B**	Category C***			
		Demonstrations / SGD	**CBL**	**SKL/Practical's**	**Self-Directed Learning (SDL)**
• Special Embryology	• Special Histology	• Facial and superior aspect of cranium (Norma frontalis, Norma verticalis) • External surface of cranial base (Norma basalis) • Lateral and occipital aspect of cranium (Norma lateralis, occipitalis) • Mandible • Temporomandibular joint • Face • Scalp • Orbit boundaries Extraocular muscles • Vessels and nerves of orbit • Eye ball • Eyelid and lacrimal apparatus • Parotid and temporal region • Infratemporal fossa • Pterygopalatine fossa • External and middle ear • Inner ear • Nose and paranasal sinuses	• Oculomotor nerve palsy • Extra Dural hemorrhage	• Cornea • Retina • External and internal ear	• Norma frontalis, verticalis and basalis • Lateralis and occipitalis, TMJ & Mandible • Orbit boundaries & Extraocular muscles • Vessels and Nerves of orbit • Temporal and Infra temporal region, Pterygopalatine fossa • External and middle ear

Category A*: By Professors

Category B:** By Associate & Assistant Professors

Category C*:** By Senior Demonstrators & Demonstrator

Teaching Staff / Human Resources of Department of Anatomy

Sr. #	Designation of Teaching Staff / Human Resource	Total number of teaching staff
1.	Professor of Anatomy department	01
2.	Assistant professor of Anatomy department (AP)	01
3.	Demonstrators of Anatomy department	04

Contact Hours (Faculty)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LGIS)	2 * 09 = 18 hours
2.	Small Group Discussions (SGD)	2*15 + 1*4= 34 hours
3.	Practical / Skill Lab	1.5 * 15 = 22.5 hours

Contact Hours (Students)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LGIS)	1 * 9 = 09 hours
2.	Small Group Discussions (SGD)	2*15 + 1*4= 34 hours
3.	Practical / Skill Lab	1.5 * 3 = 4.5 hours
4.	Self-Directed Learning (SDL)	2 * 3 = 06 hours

Physiology

Category A	Category B	Category C
Photochemistry of vision &Physiological basis for photo transduction **(By Prof. Dr. Samia Sarwar / Dr. Uzma)**	Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction **(By Dr. Uzma)**	**CBL:**
Physiology of accommodation and clinical abnormalities **(By Prof. Dr. Samia Sarwar / Dr. Uzma)**	Introduction to Physiology of external ear, Middle ear **(By Dr. Fareed)**	**PBL:**
	Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina **(By Dr. Uzma)**	**Practical:** 1. Estimation of Visual Acuity 2. Examination of 8th Cranial Nerve (vestibular function) 3. Performance of Hearing Test (cochlear function)
	Functions of Inner ear, Physiology of Hearing **(By Dr. Fareed)**	**CBL:**
	Hearing abnormalities, Tuning fork tests and audiometry **(By Dr. Aneela)**	**SGD:** 1. Physiology of Vision 2. Physiology of hearing & Balance 3. Sense of Taste & Smell
	Light & dark adaptation, Color vision, Neural functions of the retina, Central neurophysiology of vision, Neural pathways for analysis of visual information **(By Dr. Uzma)**	**SDL: (ON CAMPUS)** **1.** Introduction to Physiology of external ear, Middle ear **2.** Functions of Inner ear, Physiology of Hearing **3.** Hearing abnormalities, Tuning fork tests and audiometry **(OFF CAMPUS)** **4.** Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction **5.** Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina **6.** Photochemistry of vision &Physiological basis for photo transduction **7.** Vestibular system **8.** Sense of Taste and pathophysiology **9.** Sense of Smell and pathophysiology
	Vestibular system **(By Dr. Sidra)**	
	Lesions of visual pathway and its effects on field of vision, Movements of eyeball along with neural control **(By Dr. Uzma)**	
	Sense of Taste and pathophysiology **(By Dr. Kamil)**	
	Sense of Smell and pathophysiology **(By Dr. Kamil)**	

Category A*: By Professors

Category B:** By Associate & Assistant Professors

Category C*:** By Senior Demonstrators & Demonstrators

Teaching Staff / Human Resources of Department of Physiology

Sr. #	Designation of Teaching Staff / Human Resource	Total number of teaching staff
1.	Professor of Physiology department	01
2.	Assistant professor of Physiology department (AP)	01
3.	Associate professor of Physiology department	01 (DME)
4..	Demonstrators of Anatomy department	07
5.	Residents of physiology department (PGTs)	08

Contact Hours (Faculty) & Contact Hours (Students)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LGIS)	12 * 1= 12 hours
2.	Small Group Discussions (SGD) Case based learning (CBL)	1.5 * 3 = 4.5 hours
3.	Problem based learning (PBL)	--
4.	Practical / Skill Lab	1.5 * 3 = 4.5 hours
5.	Self- Directed Learning	3x1=3hours (on campus) + 6x1=6hours (off campus) = 9hours

Biochemistry

Category A*	Category B**	Catogery C***			
LGIS	**LGIS**	**PBL**	**CBL**	**Practical's**	**SGD**
• Neurotransmitter • Second Messenger	• Receptors • G-Proteins • Role of Vitamin A in Vision		Night Blindness	• Lipid Profile • Urine Report Revision • Spectrophotometer Revision	• Neurotransmitters • G-Proteins

Category A*: By HOD and Assistant Professor

Category B:** By All (HOD, Assistant Professors, Senior Demonstrators)

Category C*:** (By All Demonstrators)

Teaching Staff / Human Resource of Department of Biochemistry

Sr. #	Designation of Teaching Staff / Human Resource	Total number of teaching staff
1	Assistant professor of biochemistry department (AP)	01
2	Demonstrators of biochemistry department	07

Contact Hours (Faculty) & Contact Hours (Students)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours (Faculty)	Total Hours (student)
1.	Large Group Interactive Session (LECTURES)	2 * 5= 10hours	05
2.	Small Group Discussions (SGD)	1.5 * 5 = 7.5hours=22.5 hrs	4.5
3.	Problem Based Learning (PBL)	Zero	zero
4.	Practical / Skill Lab	1.5 * 5= 7.5hours=22.5 hrs	4.5
5.	Self-Directed Learning (SDL)	----------	05

Special Senses Module (First Week)
(14-08-2023 To 19-08-2023)

Date/ Day	8:00am-9:30am	9:30am – 10:20am	10:20am-11:10am	11:10am-12:00pm	12:00pm – 2:00pm	Home Assignments(2HRS)
14-08-2023 Monday	**I n d e p e n d e n c e D a y**					
15-08-2023 Tuesday	End of Block Assessment Physiology Theory / Video Assisted Quiz (08:00am-10:30am)					
16-08-2023 Wednesday	End of Block Assessment Physiology OSPE / Viva Voce Roll No. (1-180) (08:00am-02:00pm)					
17-08-2023 Thursday	End of Block Assessment Physiology OSPE / Viva Voce Roll No. (181-onwards) (08:00am-02:00pm)					
18-08-2023 Friday	**Practical & CBL/SGD** Topic mentioned at the end Pratical Thursday batch	**ISLAMIAT** Imaniat (hadith) Mufti Naem Sherazi (Even)	Dissection & Spotting			
19-08-2023 Saturday	**Practical & CBL/SGD** Topic mentioned at the end Pratical		Dissection & Spotting	12:00pm – 01:00pm **Pak Studies** Pakistan ki jughrafiyai ahmiyat aur difai haisiyat Qari Aman Ullah (Odd)	12:00pm – 01:00pm Physical Activity	

Special Senses Module (First Week)
(21-08-2023 To 26-08-2023)

Date / Day	8:00am-9:30am	9:30am – 10:20am		10:20am-11:10am		11:10am-12:00pm		12:00pm-12:20pm	12:20pm – 2:00pm	Home Assignments(2HRS)
21-08-2023 Monday	**Practical & CBL/SGD** Topic mentioned at the end	**PHYSIOLOGY LGIS**		**ANATOMY LGIS**		**BEHAVIORAL SCIENCES**		**Break**	**SGD/DISSECTION**	SDL Physiology Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction
		Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction	Introduction to Physiology of external ear, Middle ear	Histology of Eye-I	Development of Eye-I	Perception			Facial and superior aspect of cranium (Norma frontalis & Norma verticalis)	
		Dr. Uzma (Even)	Dr. Fareed (Odd)	Assist. Prof. Dr. Maria (Even)	Prof. Dr. Ifra Saeed (Odd)	Dr. Mahmood Ali (even)	Dr. Sarah Afzal (Odd)			
22-08-2023 Tuesday	**Practical & CBL/SGD** Topic mentioned at the end	**PHYSIOLOGY LGIS**		**Family Medicine**		**ANATOMY LGIS**			**SGD/DISSECTION**	SDL Anatomy Norma frontalis, verticalis and basalis
		Introduction to Physiology of external ear, Middle ear	Introduction to Physiology of Eye & Optics of vision. General Principles of optics, Physiological basis for errors of refraction	Approach to a patient with earache		Development of Eye-I	Histology of Eye-I		External surface of cranial base (Norma basalis)	
		Dr. Fareed (Even)	Dr. Uzma (Odd)	Dr. Sadia (even)	Dr. Amna (Odd)	Prof. Dr. Ifra Saeed (Even)	Assist. Prof. Dr. Maria (Odd)			
23-08-2023 Wednesday	**Practical & CBL/SGD** Topic mentioned at the end	**PHYSIOLOGY LGIS**		**RESEACH CLUB ACTIVITY**					**CBL/DISSECTION**	SDL Physiology Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina
		Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina	Functions of Inner ear, Physiology of Hearing						Lateral and occipital aspect of cranium (Norma lateralis & occipitalis) Extra Dural hemorrhage	
		Dr. Uzma (Even))	Dr Fareed (Odd)							
24-08-2023 Thursday	**Practical & CBL/SGD** Topic mentioned at the end	**PHYSIOLOGY LGIS**		**BIOMEDICAL ETHICS CLUB ACTIVITY**		**SGD/DISECTION**			**SGD/DISECTION**	SDL Neurotransmitters
		Functions of Inner ear, Physiology of Hearing	Fluid system of the eye Intraocular pressure, Function of the Structural Elements of the Retina	Ethical dilemmas Involving breach in Justice		Mandible			Temporomandibular joint	
		Dr. Fareed (Even)	Dr. Uzma (Odd)							
25-08-2023 Friday	**8:00 AM – 9:00 AM**	**9:00 AM – 10:00 AM**		**10:00 – 11:00AM**		**11:00AM – 12:00PM**		**SDL Anatomy Norma lateralis and occipitalis, TMJ & Mandible**		
	SURGERY	**BIOCHEMISTRY (LGIS)**		**ISLAMIAYAT**		**SGD/DISECTION**				
	Plastic surgery	Receptors	Neurotransmitters	Imaniat (hadith)		Face				
	Dr. Hassnain	(Odd) Dr. Isma (Even)	Dr. Aneela (Odd)	Mufti Naem Sherazi (Even)						
26-08-2023 Saturday	**Practical & CBL/SGD** Topic mentioned at the end	**RADIOLOGY**		**BIOCHEMISTRY (LGIS)**		**PAK STUDIES**		**Break**	**SGD/DISECTION**	SDL Biochemistry Receptors
		General radiologic concepts		Neurotransmitters	Receptors	Pakistan ki jughrafiyai ahmiyat aur difai haisiyat			Scalp	
		Dr. Quratalain (even)	Dr. Riffat (Odd)	Dr. Aneela (Even)	Dr. Isma (Odd)	Qari Aman Ullah (Odd)				

Topics For Practical with Venue
• Cornea (Anatomy Histology Practical) Venue-Histology laboratory • (Biochemistry Practical) Lipid Profile Venue- Biochemistry laboratory • Examination of Visual Acuity (Physiology Practical) Venue – Physiology Lab

Topics For Small Group Discussion& CBLs With Venue
• Physiology SGD: Physiology of Vision (Venue: Lecture Hall No 5) • Biochemistry SGD: Neurotansmitter

Schedule For Practical / Small Group Discussion

Day	Histology Practical	Biochemistry Practical	Physiology Practical	Physiology SGD	Biochemistry SGD
Monday	**C**	**B**	**E**	**A**	**D**
Tuesday	**D**	**C**	**A**	**B**	**E**
Wednesday	**E**	**D**	**B**	**C**	**A**
Thursday	**B**	**A**	**D**	**E**	**C**
Saturday	**A**	**E**	**C**	**D**	**B**

Venue For First Year Batches for Anatomy Dissection / Small Group Discussion

Batches	Roll No	Anatomy Teacher	Venue
A	01-90	Dr. Sajjad Hussain	New lecture Theater complex 4
B	91-180	Dr. Gaiti Ara	Lecture Hall No. 04 Anatomy Lecture Hall
C	181-270	Dr Sadia Baqir	New lecture Theater complex 1
D	271 onwards	Dr. Maryam Sohail	Lecture Hall No.03 Anatomy Lecture Hall

VENUE FOR FIRST YEAR BATCHES FOR PBL & SGD TEAM-II

Batches	Roll No	Venue	
Batch-A1	(01-35)	New Lecture Hall complex no.01	Dr. Muhammad Usman
Batch-A2	(36-70)	New Lecture Hall complex no.04	Dr. Shazia Nosheen
Batch-B1	(71-105)	Lecture Hall no.02(Basement)	Dr. Ismail
Batch-B2	(106-140)	Conference room (Basement)	Dr. Kamil Tahir
Batch-C1	(141-175)	Lecture Hall no.04(Basement)	Dr. Maryam Abbas (PGT Physiology)
Batch-C2	(176-210)	Lecture Hall no.05(Basement)	Dr. Nayab (PGT Physiology)
Batch-D1	(210-245)	Lecture Hall no.03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
Batch-D2	(246-280)	Anatomy Museum (First Floor Anatomy)	Dr. Almas (PBL) Dr. Najam-us-Sehar (SGD)
Batch-E1	(281-315)	Lecture Hall no.04 (First Floor Anatomy)	Dr. Sheena Tariq (Physiology)
Batch-E2	(315 onwards)	Lecture Hall no.05Physiology	Dr. Rahat (PBL) Dr. Fareed Ullah (SGD)

Sr. No	Batch	Roll no	Names of Teachers	
			Biochemistry	Physiology
1.	Batch – A	01-70	Dr. Romessa Naeem	Dr. Syed Ali Moosa
2.	Batch –B	71-140	Dr. Uzma Zafar	Dr. Shazia Nosheen
3.	Batch – C	141-210	Dr. Nayab	Dr. Asif Mehmood
4.	Batch –D	211-280	Dr. Rahat Afzal	Dr. Izzah Raashid & Dr. Iqra Ayub
5.	Batch -E	281-onwards	Dr. Almas Ijaz	Dr. Kamil Tahir

Venues for Large Group Interactive Session (LGIS) and SDL

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 01
Even Roll Number	New Lecture Hall Complex Lecture Theater # 04

TOPIC DETAILS OF SDL BIOCHEMISTRY

- Neurotransmitters
- Receptors

Special Senses Module (Second Week)
(28-08-2023 To 02-09-2023)

Date /Day	8:00am-9:30am	9:30am – 10:20am		10:20am-11:10am		11:10am-12:00pm		12:00pm-12:20pm	12:20pm – 2:00pm	Home Assignments(2HRS)
28-08-2023 Monday	**Practical & CBL/SGD** Topic mentioned at the end	**ENT**		**PHYSIOLOGY LGIS**		**BIOCHEMISTRY (LGIS)**		**Break**	**CBL/ DISSECTION**	SDL Anatomy Orbit boundaries Extraoccular muscles
		Nasal polyp& Sinusitis & Diseases of External Nose		Photochemistry of vision &Physiological basis for photo transduction	Hearing abnormalities, Tuning fork tests and audiometry	Role Of Vitamin A In Vision	G-Proteins		Orbit Extraocular muscles (ooculomotor nerve palsy)	
		Dr. Sundas Masood (even)	Dr. Tabasum (Odd)	Prof. Dr. Samia /Dr. Uzma (Even)	Dr. Aneela (Odd)	Dr.Almaas(Even)	Dr. Isma (Odd)			
29-08-2023 Tuesday	**Practical & CBL/SGD** Topic mentioned at the end	**PHYSIOLOGY LGIS**		**ANATOMY (LGIS)**		**BIOCHEMISTRY (LGIS)**			**SGD/DISSECTION**	SDL Anatomy Vessels and Nerves of orbit
		Hearing abnormalities, Tuning fork tests and audiometry	Photochemistry of vision &Physiological basis for photo transduction	Histology of Eye-II	Development of Eye-II	G-Proteins	Role Of Vitamin A In Vision		Vessels and Nerves of Orbit	
		Dr. Aneela (Even)	Prof. Dr. Samia / Dr. Uzma(Odd)	Assist. Prof. Dr. Maria (Even)	Prof. Dr. Ifra Saeed (Odd)	Dr. Ismaa (Even)	Dr. Almaas (Odd)			
30-08-2023 Wednesday	**Practical & CBL/SGD** Topic mentioned at the end	**PHYSIOLOGY LGIS**		**ANATOMY (LGIS)**		**EYE**			**SGD/DISSETION**	
		Light & dark adaptation, Color vision, Neural functions of the retina, Central neurophysiology of vision, Neural pathways for analysis of visual information	Vestibular system	Development of Eye-II	Histology of Eye-II	Cataract & Glaucoma & Anti glaucoma drugs			Eyeball	SDL Physiology Photochemistry of vision &Physiological basis for photo transduction
		Dr. Uzma (Even)	.Dr. Sidra (odd)	Prof. Dr. Ifra Saeed (Even)	Assist. Prof. Dr. Maria (Odd)	Dr. Ambreen (even)	Dr. Bilal Odd)			
31-08-2023 Thursday	**Practical & CBL/SGD** Topic mentioned at the end	**PHYSIOLOGY LGIS**		**ANATOMY (LGIS)**		**EYE**			**SGD/DISSECTION**	SDL physiology Vestibular system
		Vestibular system	Light & dark adaptation,Color vision, Neural functions of the retina, Central neurophysiology of vision, Neural pathways for analysis of visual information	Histology of Ear	Development of Pharyngeal Apparatus	Conjuctivitis Chalazion			Eyelids and Lacrimal apparatus	
		.Dr. Sidra (Even)	Dr.Uzma (Odd)	Assist. Prof. Dr. Maria (Odd)	Prof. Dr. Ifra Saeed (Even)	Dr. Salman (even)	Dr. Fatima (Odd)			
01-09-2023 Friday	**8:00 AM – 9:00 AM**	**9:00 AM – 10:00 AM**		**10:00 – 11:00AM**		**11:00AM – 12:00PM**		SDL **Biochemistry** G-Proteins		
	EYE	**PHYSIOLOGY LGIS**		**ISLAMIAT**		**SGD/DISECTION**				
	Ocular trauma & Ocular Procedures	Lesions of visual pathway and its effects on field of vision, Movements of eye ball along with neural control	Sense of Taste and pathophysiology	Zimidaari aur taluqaat		Parotid & Temporal region				
	Dr. Wajeeha (even) / Dr. Sidra Naseem (Odd)	Dr. Uzma (Even)	Dr. Kamil (Odd)	Mufti Naem Sherai (Even)	Qari Aman Ullah(Odd)					
Saturday 02-09-2023	**Practical & CBL/SGD** Topic mentioned at the end	**ANATOMY (LGIS)**		**BIOCHEMISTRY (LGIS)**		**PAK STUDIES**		**Break**	**SGD/DISECTION**	SDL Biochemistry Role Of Vitamin A In Vision
		Development of Pharyngeal Apparatus	Histology of Ear	Second messenger system	Second messenger system	Pakistan k hamsaya mumalik se taluqaat			Dissection	
		Prof. Dr. Ifra Saeed (Odd)	Assist. Prof. Dr. Maria (Even)	Dr. Isma (Even)	DrAneela (Odd)	` Qari Aman Ullah (Even)	Mufti Naem Sherai(Odd)			

Topics For Practical with Venue
• Retina (Anatomy Histology Practical) Venue-Histology laboratory • (Biochemistry Practical) Urine Report Venue- Biochemistry laboratory • Examination of 8th Cranial Nerve (Vestibular function) (Physiology Practical) Venue – Physiology Lab

Topics For Small Group Discussion& CBLs With Venue
• Physiology SGD: Physiology of hearing & Balance (Venue: Lecture Hall No 5) • Biochemistry SGD: G-Proteins

Schedule For Practical / Small Group Discussion

Day	Histology Practical	Biochemistry Practical	Physiology Practical	Physiology SGD	Biochemistry SGD
Monday	**C**	**B**	**E**	**A**	**D**
Tuesday	**D**	**C**	**A**	**B**	**E**
Wednesday	**E**	**D**	**B**	**C**	**A**
Thursday	**B**	**A**	**D**	**E**	**C**
Saturday	**A**	**E**	**C**	**D**	**B**

Venue For First Year Batches for Anatomy Dissection / Small Group Discussion

Batches	Roll No	Anatomy Teacher	Venue
A	01-90	Dr. Sajjad Hussain	New lecture Theater complex 4
B	91-180	Dr. Gaiti Ara	Lecture Hall No. 04 Anatomy Lecture Hall
C	181-270	Dr Sadia Baqir	New lecture Theater complex 1
D	271 onwards	Dr. Maryam Sohail	Lecture Hall No.03 Anatomy Lecture Hall

VENUE FOR FIRST YEAR BATCHES FOR PBL & SGD TEAM-II

Batches	Roll No	Venue	
Batch-A1	(01-35)	New Lecture Hall complex no.01	Dr. Muhammad Usman
Batch-A2	(36-70)	New Lecture Hall complex no.04	Dr. Shazia Nosheen
Batch-B1	(71-105)	Lecture Hall no.02(Basement)	Dr. Ismail
Batch-B2	(106-140)	Conference room (Basement)	Dr. Kamil Tahir
Batch-C1	(141-175)	Lecture Hall no.04(Basement)	Dr. Maryam Abbas (PGT Physiology)
Batch-C2	(176-210)	Lecture Hall no.05(Basement)	Dr. Nayab (PGT Physiology)
Batch-D1	(210-245)	Lecture Hall no.03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
Batch-D2	(246-280)	Anatomy Museum (First Floor Anatomy)	Dr. Almas (PBL) Dr. Najam-us-Sehar (SGD)
Batch-E1	(281-315)	Lecture Hall no.04 (First Floor Anatomy)	Dr. Sheena Tariq (Physiology)
Batch-E2	(315 onwards)	Lecture Hall no.05Physiology	Dr. Rahat (PBL) Dr. Fareed Ullah (SGD)

Sr. No	Batch	Roll no	Names of Teachers	
			Biochemistry	Physiology
1.	Batch – A	01-70	Dr. Romessa Naeem	Dr. Syed Ali Moosa
2.	Batch –B	71-140	Dr. Uzma Zafar	Dr. Shazia Nosheen
3.	Batch – C	141-210	Dr. Nayab	Dr. Asif Mehmood
4.	Batch –D	211-280	Dr. Rahat Afzal	Dr. Izzah Raashid & Dr. Iqra Ayub
5.	Batch -E	281-onwards	Dr. Almas Ijaz	Dr. Kamil Tahir

Venues for Large Group Interactive Session (LGIS) and SDL

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 01
Even Roll Number	New Lecture Hall Complex Lecture Theater # 04

TOPIC DETAILS OF SDL BIOCHEMISTRY

- G-Proteins
- Role Of Vitamin a In Vision

Special Senses Module (Third Week)
(04-09-2023 To 09-09-2023)

Date / Day	8:00am-9:30am	9:30am – 10:20am		10:20am-11:10am		11:10am-12:00pm	12:00pm-12:20pm	12:00pm – 2:00pm	Home Assignments(2HRS)
04-09-2023 Monday	**Practical & CBL/SGD** Topic mentioned at the end	**PHYSIOLOGY LGIS**		**EYE**		**SGD/DISSECTION**	**Break**	**SGD/DISSECTION**	Online SDL Evaluation
		Sense of Taste and pathophysiology	Lesions of visual pathway and its effects on field of vision, Movements of eye ball along with neural control	Refractive Errors Strabismus		Dissection		Infratemporal fossa-I	
		Dr. Kamil (Even)	Dr. Uzma (Odd)	Dr. Sidra Jabeen (Even)	Dr. Maria (Odd)				
05-09-2023 Tuesday	**Practical & CBL/SGD** Topic mentioned at the end	**PHYSIOLOGY LGIS**		**MEDICINE**		**SGD/DISSECTION**		**SGD/DISSECTION**	
		Physiology of accommodation and clinical abnormalities	Sense of Smell and pathophysiology	Management Of Covid-19 Sense Of Smell		Dissection		Infratemporal fossa-II	SDL Biochemistry 2nd Messenger System
		Prof.Dr. Samia Sarwar/ Dr Uzma (Even)	Dr. Kamil (Odd)	Dr. Sadef Zaman (Even)	Dr. Semaab Abid (Odd)				
06-09-2023 Wednesday	**Practical & CBL/SGD** Topic mentioned at the end	**PHYSIOLOGY LGIS**		**ANATOMY LGIS**		**ENT**		**SGD/DISSECTION**	Anatomy SDL Temporal and Infra temporal region, Pterygopalatine fossa
		Sense of Smell and pathophysiology	Physiology of accommodation and clinical abnormalities	Development of Ear	Development of Nose	Otitis Media Ear Discharge &Hearing Problems in Children		Pterygopalatine fossa	
		Dr.Kamil (Even)	Prof.Dr. Samia Sarwar/ Dr Uzma (Odd)	Assist. Prof. Dr. Maria (Even)	Prof. Dr. Ifra Saeed (Odd)	Dr. Haitum (Even)	Dr. Arshad (Odd)		
07-09-2023 Thursday	**Practical & CBL/SGD** Topic mentioned at the end	**PHYSIOLOGY SDL No.0I**		**ANATOMY LGIS**		**ENT**		**SGD/DISSECTION**	Anatomy SDL External and middle ear Online clinical Evaluation
		Introduction to Physiology of external ear, Middle ear		Development of Nose	Development of Ear	Facial fractures		External and middle ear	
		Dr.Fareed (Even)	Dr Afsheen (Odd)	Prof. Dr. Ifra Saeed (Even)	Assist. Prof. Dr. Maria (odd)	Dr. Nida (Even)	Dr. Ashar (Odd)		
08-09-2023 Friday	**8:00 AM – 9:00 AM**	**9:00 AM – 10:00 AM**		**10:00 – 11:00AM**		**11:00AM – 12:00PM**			SDL Physiology Sense of Taste and pathophysiology
	PHYSIOLOGY SDL No. 02	**ISLAMIAT**		**ANATOMY LGIS**		**SGD/DISSECTION**			
	Functions of Inner ear, Physiology of Hearing	Uswa-e-hasna		Development of Palate	Developme nt of Palate	Inner ear			
	Dr. Fareed (Even) / Dr Ali Zain (Odd)	Mufti Naem Sherai (Even)	Qari Aman Ullah (Odd)	Prof. Dr. Ifra Saeed (Odd)	Assist. Prof. Dr. Maria (Even)				
Saturday 09-09-2023	**Practical & CBL/SGD** Topic mentioned at the end	**PAKSTUDIES**		**PHYSIOLOGY SDL No. 03**		**SGD/DISECTION**	**Break**	**SGD/DISECTION**	SDL Physiology Sense of Smell and pathophysiology
		Pakistan k qudrati wasail-maadniyaat		Hearing abnormalities, Tuning fork tests and audiometry		Inner Ear		Nose and paranasal sinuses	
		Qari Aman Ullah (Even)	Mufti Naem Sherazi (Odd)	Dr. Aneela (Even)	Dr Usman (Odd)				

Topics For Practical with Venue	Topics For Small Group Discussion& CBLs With Venue
• External & Internal Ear (Anatomy Histology Practical) Venue-Histology laboratory • (Biochemistry Practical) Revision of Spectrophotometer Venue- Biochemistry laboratory • Performance of Hearing Test (cochlear function) (Physiology Practical) Venue – Physiology Lab	• Physiology SGD: Physiology of Taste & Smell (Venue: Lecture Hall No 5) • Biochemistry CBL: Night Blindness

Schedule For Practical / Small Group Discussion

Day	Histology Practical	Biochemistry Practical	Physiology Practical	Physiology SGD	Biochemistry SGD
Monday	**C**	**B**	**E**	**A**	**D**
Tuesday	**D**	**C**	**A**	**B**	**E**
Wednesday	**E**	**D**	**B**	**C**	**A**
Thursday	**B**	**A**	**D**	**E**	**C**
Saturday	**A**	**E**	**C**	**D**	**B**

Venue For First Year Batches for Anatomy Dissection / Small Group Discussion

Batches	Roll No	Anatomy Teacher	Venue
A	01-90	Dr. Sajjad Hussain	New lecture Theater complex 4
B	91-180	Dr. Gaiti Ara	Lecture Hall No. 04 Anatomy Lecture Hall
C	181-270	Dr Sadia Baqir	New lecture Theater complex 1
D	271 onwards	Dr. Maryam Sohail	Lecture Hall No.03 Anatomy Lecture Hall

VENUE FOR FIRST YEAR BATCHES FOR PBL & SGD TEAM-II

Batches	Roll No	Venue	
Batch-A1	(01-35)	New Lecture Hall complex no.01	Dr. Muhammad Usman
Batch-A2	(36-70)	New Lecture Hall complex no.04	Dr. Shazia Nosheen
Batch-B1	(71-105)	Lecture Hall no.02(Basement)	Dr. Ismail
Batch-B2	(106-140)	Conference room (Basement)	Dr. Kamil Tahir
Batch-C1	(141-175)	Lecture Hall no.04(Basement)	Dr. Maryam Abbas (PGT Physiology)
Batch-C2	(176-210)	Lecture Hall no.05(Basement)	Dr. Nayab (PGT Physiology)
Batch-D1	(210-245)	Lecture Hall no.03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
Batch-D2	(246-280)	Anatomy Museum (First Floor Anatomy)	Dr. Almas (PBL) Dr. Najam-us-Sehar (SGD)
Batch-E1	(281-315)	Lecture Hall no.04 (First Floor Anatomy)	Dr. Sheena Tariq (Physiology)
Batch-E2	(315 onwards)	Lecture Hall no.05Physiology	Dr. Rahat (PBL) Dr. Fareed Ullah (SGD)

Sr. No	Batch	Roll no	Names of Teachers	
			Biochemistry	Physiology
1.	Batch – A	01-70	Dr. Romessa Naeem	Dr. Syed Ali Moosa
2.	Batch – B	71-140	Dr. Uzma Zafar	Dr. Shazia Nosheen
3.	Batch – C	141-210	Dr. Nayab	Dr. Asif Mehmood
4.	Batch – D	211-280	Dr. Rahat Afzal	Dr. Izzah Raashid & Dr. Iqra Ayub
5.	Batch - E	281-onwards	Dr. Almas Ijaz	Dr. Kamil Tahir

Venues for Large Group Interactive Session (LGIS) and SDL

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 01
Even Roll Number	New Lecture Hall Complex Lecture Theater # 04

TOPIC DETAILS OF SDL BIOCHEMISTRY

- Second Messenger

Next week will be assessment week. The detail of assessment week will be shared once finalized.

Special Senses Module (Fourth Week)
(11-09-2023 To 16-09-2023)

Date / Days	Tentative Schedule for Special Sesnes Module Assessment	Time
11-09-2023 Monday	Physiology Viva Voce (Roll no 1-180) Anatomy Regional Assessments (Roll no 181- onwards)	08:00am - 02:00pm
12-09-2023 Tuesday	Anatomy Regional Assessments (Roll no 1-180) Physiology Viva Voce (Roll no 181- onwards)	08:00am - 02:00pm
13-09-2023 Wednesday	Anatomy Theory Paper	08:15am - 09:15am
14-09-2023 Thursday	Physiology Theory Paper	08:15am - 09:15am
15-09-2023 Friday	Biochemistry Theory Paper & Allied	08:15am - 09:15am
16-09-2023 Saturday	SDL	

Note: Timetable Subject to Change According to The Current Circumstances.

SECTION-VI

Table of Specification (TOS) For Special Senses Module Examination

Sr. #	Discipline	No. of MCQs (%)	No. of MCQs according to cognitive domain			No. of SEQs (%)		No. of SEQs according to cognitive domain			Viva voce	Total Marks
			C1	C2	C3	No. of items	Marks	C1	C2	C3		
1.	Anatomy	25	15	5	5	5	25	1	2	2	60	110
2.	Physiology	30	18	9	3	4	20	1	2	1	25	75
3.	Biochemistry	5	3	2	-	1	15	-	1	-	-	20
4.	Bioethics & Professionalism	6	-	3	3	-	-	-	-	-	-	6
5.	Research & Artificial Intelligence and Innovation	10	-	5	5	-	-	-	-	-	-	10
6.	Medicine	5	-	3	2	-	-	-	-	-	-	5
7.	Surgery	4	-	2	2	-	-	-	-	-	-	4
8.	ENT	6	-	3	3							6
9.	Eye	6	-	3	3							6
10.	Family Medicine & Community Health	4	-	2	2	-	-	-	-	-	-	4
Grand Total												246

Annexure I

(Sample OSPE, MCQ, & SEQ)

Sample Paper of MCQs
Department of Anatomy

1. During the 4th week of development, mesenchyme for pharyngeal arches comes from which of following sources? (1 Point)
    a. Neural crest cells
    b. Lateral plate mesoderm
    c. Paraxial mesoderm
    d. Ectodermal placods
    e. All of above
2. A teenager was fond of hearing loud rock music he is liable to suffer from (1 Point)
    a. Nerve deafness
    b. Presbycusis
    c. Conductive deafness
    d. Sensorineural deafness
    e. Otosclerosis
3. Established function of external ear (1 Point)
    a. Attenuation
    b. Accentuation
    c. Impedance matching
    d. Determination of direction
    e. Determination of loudness
4. Medial palpebral ligament is attached to the frontal process of (1 Point)
    a. Frontal
    b. Zygomatic
    c. Maxilla
    d. Temporal
    e. Nasal
5. The stroma of cornea (1 Point)
    a. Makes up 30% of the corneal thickness.
    b. Has collagen bundles arranged at right angles.
    c. Is highly vascular.
    d. Has cells called hyalocytes.
    e. Has hydration maintained by surface epithelium

Sample Paper of SEQs
Department of Anatomy

1. a. Give the boundaries and contents of infratemporal fossa (3)

   b. Tabulate the attachments and actions of extra occular muscles. (2)

2. a. Describe the formation of nasal septum, Discuss its blood supply with clinical significance. (3)

   b. Give connections of submandibular ganglion with special reference to its secretomotor fibers. (2)

1. Cannaliculus innominatus is situated between foramen (1 Point)
    a. Rotudum and ovale
    b. Ovale and spinosum
    c. Mastoid and styloid process
    d. Sphenoid and Vesalius
    e. Sacerum and ovale
2. Olfactory receptors have a unique capability that they: (1 Point)
    a. Do not adapt.
    b. Do not regenerate.
    c. Are hyperpolarized.
    d. Make electrotonic junctions.
    e. Make gap junctions
3. Which of the following substances is present in high concentration in the urine of patients with pheochromocytomas? (1 Point)
    a. Epinephrine.
    b. Metanephrine.
    c. Norepinephrine.
    d. Dopamine.
    e. 3- methyoxy-4-OH-Mandelic acid
4. On turning head to the right, the impulse traffic: (1 Point)
    a. Increases in Right VIII nerve.
    b. Decreases in Right VIII nerve.
    c. Increases in Left VIII nerve.
    d. Decreases in Left VII nerve.
    e. No change
5. On irrigating right auditory canal with cold water nystagmus is: (1 Point)
    a. Towards left side
    b. Towards right side
    c. Not seen
    d. Vertical
    e. Rotational

Department of Biochemistry

1. Which one of the following is fat soluble vitamin? (1 Point)
    a. vitamin A
    b. vitamin C
    c. vitamin B1
    d. vitamin B6
    e. vitamin B9
2. Auditory loss in a 70-year-old man is best called. (1 Point)
    a. Nerve deafness
    b. Presbycusis
    c. Conductive deafness
    d. Sensorineural deafness
    e. Otosclerosis
3. Taste receptors are: (1 Point)
    a. Modified neural cells.
    b. Also found in respiratory epithelium
    c. Modified epithelial cells.
    d. Have a half life of 8 weeks.
    e. Cannot regenerate
4. Superior and inferior lateral arteries are the branches of (1 Point)
    a. Facial artery
    b. External carotid artery
    c. Maxillary artery
    d. Lingual artery
    e. Transverse facial artery
5. Hair cell in vestibular apparatus are type of (1 Point)
    a. Teleceptors
    b. Exteroceptors
    c. Mechanoreceptors
    d. Nociceptors
    e. Photoceptors

SEQ

Q. Explain synthesis and fate of catecholamines. 05

1. ----Includes rules of conduct that may be used to regulate our activities concerning the biological world.

a. Bio-piracy
b. Biosafety
c. Bioethics
d. Bio-patents
e. Bio-logistic

2. The right of patients having self-decision is called.

a. Justice
b. Autonomy
c. Beneficence
d. Veracity
e. Fidelity

3. Following is not code of ethics.

a. Integrity
b. Objectivity
c. Confidentiality
d. Behaviour
e. Autonomy

4. -------in the context of medical ethics, if it's fair and balanced

a. Justice
b. Autonomy
c. Beneficence
d. Veracity
e. Fidelity

5. ------Principle requiring that physicians provide, positive benefits

a. Justice
b. Autonomy
c. Beneficence
d. Veracity
e. Fidelity