



STUDY GUIDE
4th YEAR MBBS
Y4 – B3

DEPARTMENT OF MEDICAL EDUCATION

CMH KHARIAN MEDICAL COLLEGE



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MISSION

Our mission is to educate and produce exemplary doctors who practice ethical patient centered health care, discover and advance knowledge and are responsive to the community needs.

VISION

To produce competent doctors equipped with sound knowledge based on scientific principles, imbued with ethics and moral values primed to serve the community through the profession.

Our aim is to

- Provide outstanding educational environment for medical students.
- Develop exemplary clinicians who are lifelong learners and provide the highest quality compassionate care and serve the needs of their community and the nation in the best traditions of medical profession.
- Ensure the highest ethical and professional standards in all of our deeds.

Exit Outcomes for the CKMC Graduate

At the end of five years MBBS degree program graduate of CMH Kharian Medical College should be able to:

Knowledge

- Integrate knowledge of basic and clinical sciences in disease prevention and promotion of health and well-being of community.
- Able to appraise varied information they would come across during professional work and testify innovative ideas to benefit human society through evidence-based health care practice

- Demonstrate scientific knowledge in all professional activities
- Demonstrate research skills which bring innovation and significance to health care practices.

Skills

- Able to perform physical examinations, formulate provisional diagnosis with appropriate investigations to identify specific problems.
- Perform various common procedures to diagnose and manage non critical clinical problems.
- Demonstrate competency in life saving procedures.
- Exhibit propensity of critical thinking, problem solving and lifelong self-directed learning skills.

Attitude

- Manifest ethical values and professionalism.
- Demonstrate professional attitude towards patients, their families, seniors and colleagues.
- Demonstrate dedication and professionalism when faced natural disasters in country.
- Demonstrate communication skills, inter professional skills and leadership.

knowledge	Skill	Attitude
Integrated knowledge of basic & clinical sciences	Communication skills	Ethical values
Patient centered care	Research skills	
Health promotion & disease prevention	Patient management skills	Professionalism
Community needs	Leadership skills	
	Critical thinking skills	

Introduction to the Study Guide

Dear Students,

We, at the Department of Medical Education, CMH Kharian Medical College, have developed this study guide especially for you. This study guide is an aid to

- Inform you how this part of your syllabus has been organized.
- Inform you how your learning programs have been organized in this block.
- Help you organize and manage your studies throughout the block
- Guide you on assessment methods, rules and regulations.
- Communicate information on organization and management of the block. This will help you to contact the right person in case of any difficulty.
- Define the objectives which are expected to be achieved at the end of the block.
- Identify the learning strategies such as lectures, small group discussions, clinical skills, demonstration, tutorial and case-based learning that will be implemented to achieve the block objectives.
- Provide a list of learning resources such as books, and journals for students to consult in order to maximize their learning.

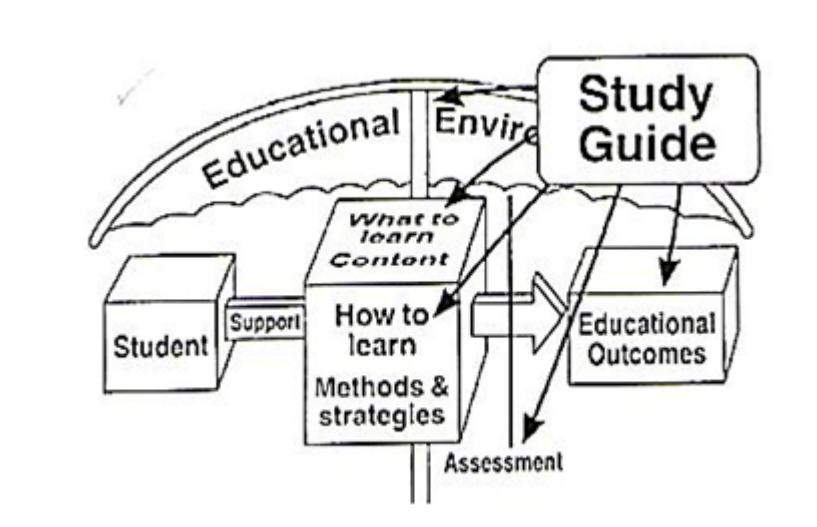


Figure 1 Objectives of study guide by Harden

Curriculum Integration



Medical college curriculum shall be organized in blocks of modules. The modules are named after body system for example a module of blood in a block. The key details are as follows:

1. There shall be three blocks in 4th year MBBS comprising modules.
2. The blocks shall be labeled as 1, 2 and 3.
3. Each module in a block shall have a title. The name of the module shall represent the content taught and learned the majority of time in that module. Module shall be named after body systems.
4. The duration of three blocks shall vary between 10-12 weeks according to syllabus.
5. The syllabus shall be integrated horizontally around systems of the body.
6. There shall be vertical integration to the extent decided by the curriculum coordination committee.
7. Vertical integration shall be in case based learning sessions and in clinical lectures of basic sciences, scheduled in the structured training program.

Teaching and Learning Methods

1: Small Group Discussions (SGD)

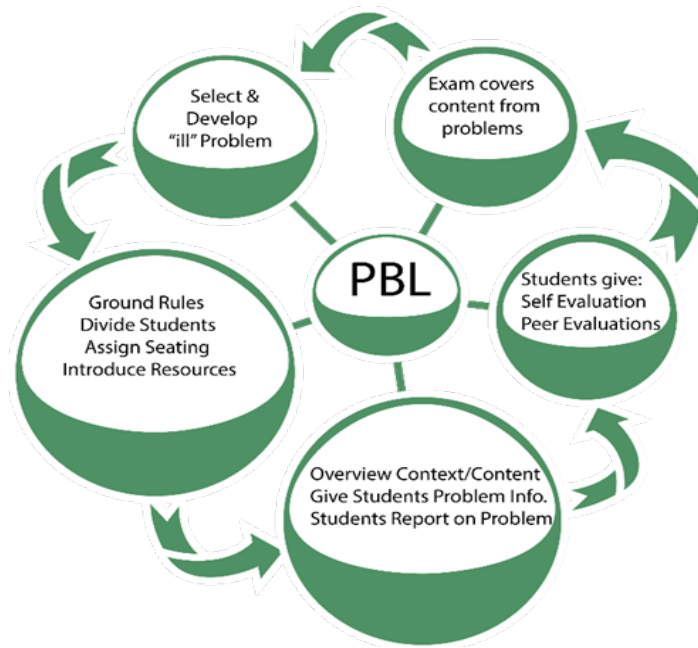


The topic will be taught in groups with the help of models and audiovisual aids. Pre-planned topics would help students to combine their wisdom in achieve learning objectives. Facilitator would be guiding to achieve learning objectives and making them on right track by clarify any misconception.

“Small group learning provides more active learning, better retention, higher satisfaction, and facilitates development of problem-solving and team-working abilities (Jahan, Siddiqui, AlKhouri, Ahuja, & AlWard, 2016).

2: Problem Based Learning (PBL)

This is group learning comprising of 8-10 students guided by a facilitator. For a specific problem given to students two sessions of 2 hours would be scheduled to achieve the learning objectives. In the first session students will discuss problem based upon their existing knowledge among the group and will produce a list of their learning objectives for further study. In the second session students share, discuss with each other to build new knowledge.



PBL is a self-directed learning and that type of educational strategy most likely produce doctors who are prepared for lifelong learning and able to meet the changing needs of their patients (Spencer & Jordan, 1999).

3: Large Group Interactive Session (LGIS)



These are meant to give overview of certain course content. They should be interactive so that students can not only gain knowledge but should completely understand it. Students may clarify the difficult concepts in these sessions. The lecturer introduces a topic and explains the underlying phenomena through questions, pictures, videos of patient's interviews, exercises, etc. Students are actively involved in the learning process.

4: Self Directed Learning (SDL)



In this modern era of medical education, students assume responsibilities of their own learning according to the principles of adult learning. They can study independently, can share and discuss with peers, can take information from the sources of information college have like library, internet and teachers. Students will be provided time within the scheduled college hours for self-study.

5: Hands on Training

- **Lab session**



Practical, being the most basic and effective tool for imparting knowledge, goes hand in hand with theory for better understanding and concept building. In view of the complexities in the basics and fundamentals of Medical sciences, a good practical demonstration of the underlying concept is a must to simplify the subject. Pharmacology, microbiology and forensic medicine practical will build skills in students of 3rd year and there would be test of these skills in OSPE exam.

- **Clinical Rotations**



The students will rotate in the clinical departments to see integration of knowledge into clinical practices.

Teaching and learning activities are meant to help students to gain new knowledge. It should be kept in mind that they are not meant to fully cover the objectives of the subject. It is therefore responsibility of students to attain more information to cover all objectives given in the overall objectives.

Class attendance and participation is of most important in gaining knowledge. If any help is needed module team can be contacted without any hesitation. Attendance will be strictly checked in different teaching activities. If attendance is **less than 75%**, students would not be allowed to sit for the examination.

Attendance in the examination is must and no students would be allowed to enter the examination area after starting the examination. In case of sickness, sick leaves from government/private hospitals or the emergency of the college hospital will only be

entertained.

Assessment Format

Assessment is a goal-oriented process (Angelo, 1995). We assess in order to check whether the learning objectives set at the initiation of the program are met or not and to what extent (Amin, 2007).

No student will be allowed to sit in the annual examination if attendance is below 75% in theory and practical separately.

Assessment types

The assessment will be continuous. The purpose of continuous assessment is formative and summative.

Summative Assessment:

The marks of this type of assessment contribute in the final university result through internal assessment. It comprises:

- CBL/tutorial assessment
- Scheduled tests
- Sub-stages
- End of block exam
- Pre-annual exam

Scheduled tests and sub-stages will be conducted intermittently throughout the block. Their schedule will be intimated through the time tables.

The end of the block exam will be conducted after completion of weeks of instruction. It will comprise one theory paper and one practical exam for Special Pathology, Community Medicine, Eye & Ent. (Table of specifications (TOS) for exam has been provided)

Formative Assessment: Tests may be quizzes, surprise tests/written assignments/self-reflection by students during the teaching time but their marks will not be added to internal evaluation marks. The

purpose of formative assessment is to provide feedback to the students, for the purpose of improvement and to teachers to identify areas where students need further guidance.

Internal Assessment

(Will be submitted to the university before professional exam)

- The weightage of internal assessment shall be 10 % in the annual professional examination (or 10 marks for 100 marks in theory and practical each)
- Scheduled tests, sub-stages, CBLs/tutorials, block examinations and pre-annual examinations, conducted by the college shall contribute towards internal assessment for professional examination.

Annual Professional Examination:

- The professional examinations schedule will be provided by NUMS.
- There will be two components of the final result
 - (i) Examination-90 %
 - (ii) Internal Assessment- 10 %
- There will be one theory paper and one Practical exam for Special Pathology, Community Medicine, Eye & Ent each. For practical the class will be divided into batches. Each batch will have practical exam of one subject on the specified day, according to schedule.
- Annual Theory & Practical Examination shall be of 300 marks each in Special Pathology, Community Medicine and 200 marks for Eye & Ent. The pass score shall be 50% in theory and practical separately
- The Annual Theory paper shall be of 135 marks for each Community Medicine and Special Pathology. 15 marks of internal assessment papers, conducted throughout the year will be added to it, to make annual theory assessment of 150 marks.
Similarly, the annual practical examination will be of 135 marks. 15 marks of internal evaluation of practical exams, conducted throughout the year will be added to it, to make annual practical assessment of 150 marks.
- The pass score shall be 75 out of 150, in theory and practical separately.
- The Annual Theory paper shall be of 90 marks for Eye & Ent. 10 marks of internal assessment papers, conducted throughout the year will be added to it, to make annual theory assessment of 100 marks.
Similarly, the annual practical examination will be of 90 marks. 10 marks of internal evaluation of practical exams, conducted throughout the year will be added to it, to make annual practical assessment of 100 marks.
- The pass score for Eye & Ent shall be 50 out of 100, in theory and practical separately.

Schedule of examinations:

a) Continuous assessments schedule

Schedule provided by each department in Time table.

b) Formative tests: Throughout the block

Block Development Committee

Chairperson curriculum committee	Principal Brig (Retd) Shoaib Nayyar Hashmi
Director Medical education	Dr Aasma Qaiser
Block Planner	Dr Aasma Qaiser
Resource Persons	Community Medicine: Dr. Ifat Naiyar S. Pathology: Dr. Urwa Sarwar Eye: Dr Kainat Ent: Dr Jawad Medicine: Brig. Khalid Surgery: Col Nisar
Study Guide Developed By	Department of Medical Education CMH Kharian Medical College Kharian

Structured Summary of Y4B2

Block Code	Y4B3
Pre requisite Block	Y4B1, Y4B2
Duration	10 weeks
Rationale	The Y4B3block is taught after the students clear their Y4B2 modular exam. In a period of 10 weeks, the block aims to form a basis for knowledge and skills related to health and disease status of community, identify ethical issues and malpractices related to health care delivery and health research, knowledge of structure and function of Eye & Ent and diagnosis of diseases in pediatrics.
Community Medicine	MCH (Reproductive Health, Preventive Pediatrics, Geriatrics), Health Education, Health System in Pakistan, Health planning and Policy, Nutrition, Partners in Health, School and Dental Health Service, Injuries and accidents, Disaster management, Occupational Health, Snake bite , Current Health Programs in Pakistan, Environmental Health.
Special Pathology	The etiology, clinical features, pathogenesis, laboratory findings, morphological features and clinic-pathologic consequences of major diseases related to the Endocrine System/ Short stature, Central & Peripheral Nervous System, White blood cells, Red blood cells and bleeding disorders
Eye	Diabetic retinopathy, Retinal vascular diseases and macular disorders. Pediatric Vitreoretina, Strabismus, Ocular Trauma of Blunt & penetrating and IOFB, Chemical injuries and Orbital fractures, Neuro-Ophthalmology: Introduction, visual pathway and cranial Nerve pathways. pupil and miscellaneous disorders, Visual loss
Ent	Diseases of the oral cavity and pharynx, Inflammatory diseases of pharyngeal lymphoid tissue , Differential diagnoses white patch on the tonsil, Abscess around the pharynx, Tumor of oropharynx, Miscellaneous condition of the ENT, Disease of larynx I, Disease of larynx II, Miscellaneous condition of larynx, Tumor of larynx, Tracheostomy, Neck masses, Disease of Esophagus, Advances in ENT/Neck surgeries.
Behave. sciences	Introduction to behavioral science, Professionalism and its attributes, Ethics,



Learning Outcomes

Knowledge

- Recognize health issues (occupational, nutritional, environmental, reproductive, and social) at household and community levels and to formulate appropriate interventions and educate community effectively.
- Describe the etiology, clinical features, pathogenesis, laboratory findings, morphological features and clinic-pathologic consequences of major diseases related to the Endocrine System/ Short stature, Central & Peripheral Nervous System, White blood cells, Red blood cells and bleeding disorders
- Discuss different features of diabetic eye disease.
- Manage a case of diabetic retinopathy.
- Identify different retinal vascular and macular disorders.
- Discuss differential diagnosis of leucocria.
- Identify strabismus and know principles of management of different type of squint (Strabismus).
- Discuss management of chemical injury.

	<ul style="list-style-type: none"> • Identify features of blunt and penetrating ocular truma. • Discuss visual pathway and its pathologies. • Discuss different optic nerve palsies related to eye. • Identify different causes of visual loss.
<p style="text-align: center;">Skill</p>	<ul style="list-style-type: none"> • Establish diagnosis of given slides of Special Pathology lesions included in the block, correlating histopathological findings. • Establish diagnosis of given topics of Kidney and collecting system, Female Genital system and Breast by correlating findings of given slides with gross morphology. • Able to diagnose a case of Meniere’s disease based on proper history and suggest appropriate treatment including rehabilitation after the interpretation of investigations. • Diagnose a case of otosclerosis based on history and knowledge of etiology, pathology, presentation, investigations and managements along with counseling. •
<p style="text-align: center;">Attitude</p>	<ul style="list-style-type: none"> • Demonstrate the effective attitude towards the colleagues • Analyze and address problems collaboratively. • Execute analytic, communicative and collaborative skills along with content knowledge • Demonstrate a professional attitude, team building spirit and good communication skills • Observe lab safety rules

Course content

Community Medicine Y4B1

Learning outcomes:

After completion of Community Medicine 1stblock the students would be able to:

- Identify & prioritize the health problems of community
- Collect, analyze present, interpret data and apply relevant statistical tests to conduct a house hold survey & a mini research project.
- Appraise health promotion, disease prevention and public health as major components of health and evaluate the role of public health in providing individual health care.
- Assess health and disease status of the community with the help of indicators in the secondary data and give relevant suggestions
- Identify ethical issues and malpractices related to health care delivery and health research

The following learning objectives, MIT, Assessment strategies will be used to achieve the above outcomes:

S #	Topic	Learning objectives students will be able to		MIT	Names of Instructor	Assessment
		Knowledge	Skill			
1.	MCH (Reproductive Health, Preventive Pediatrics, Geriatrics)	<ul style="list-style-type: none"> ● Define and interpret the rationale of Reproductive health. ● Infer the logic behind application of different preventive measures in various phases of life to improve the Maternal Health ● Appraise the relationship between the Maternal Health status and the outcome of pregnancy ● Determine the factors that contribute to increase MMR ● Develop interventions to control MMR ● Define infant mortality ● Determine the factors which predispose to high infant mortality ● Formulate interventions to prevent infant mortality in different situations ● Recognize and compute different indicators which can be used for maternal and child health care and services ● Describe the advantages and disadvantages of different types of feeding practices ● Determine the conditions of concern prevailing in the mother 	<ul style="list-style-type: none"> ● Create awareness among women regarding antenatal visits and postnatal follow-up ● Perform antenatal checkups of women. ● Educate the mothers about technique of breast feeding and to advice to Tuberculous mother about lactation ● Educate mothers about the steps of weaning ● Educate mothers regarding EPI Prepare home- made ORS ● Advise pregnant women on Nutritional and immunization needs ● Counsel women who give bottle feeding to their children ● Weigh the baby and measure the height of children ● Assess degree of dehydration ● Motivate women to get their babies vaccinate on national 	Flipped class room LGIS		MCQs SAQs, OSCE

		<p>during breast feeding</p> <ul style="list-style-type: none"> • Define geriatrics, describe problems and diseases of the old age • Identify risk behavior in old age people • Suggest preventive measures at different levels of prevention and in different scenarios • Formulate and suggest preventive measures for cancers of reproductive tract in individuals and populations at- risk 	<p>immunization days</p> <ul style="list-style-type: none"> • Plot and interpret growth chart • Educate Traditional Birth Attendant for clean and safe delivery at First Level Care Facility • Educate the individuals how to cope with different problems and diseases of old age 			
2.	Health Education	<ul style="list-style-type: none"> • Define health education and describe its phases • Choose suitable method of health education for certain audiences Recognize scope, stages, approaches, principles and functions of health education • Identify and overcome barriers of health education and outline an ideal communication process for a given situation • Compose a health education message in given situation • Prepare a plan for health education intervention programs for different types of audience in a given scenario 	<ul style="list-style-type: none"> • Educate various groups effectively • Use Role play as an educational and interventional tool • Advise paramedics and other auxiliary healthcare staff about infection control • To participate in health awareness campaigns pertaining to nationally and internationally recognized days for global public health and population issues 	Flipped class room		MCQs SAQs OSCE

3.	Health System in Pakistan, Health planning and Policy	<ul style="list-style-type: none"> ● Define health care and health care system ● Distinguish various levels of health care ● Identify deficiencies in different health- care facilities <p>Differentiate different sectors of health system and functioning</p> <ul style="list-style-type: none"> ● Describe and relate the referral mechanism to various levels of health care facility ● Describe medical team ● Identify the causes of failure of adequate health-care delivery in Pakistan and give recommendations for improvement based on scenarios 	<ul style="list-style-type: none"> ● Appraise the efficiency of a health system/health outlet 	LGIS		MCQs SAQs
4.	Nutrition	<ul style="list-style-type: none"> ● Define the terminologies used in relation to food & nutrition ● Classify and comprehend the importance of different foods, minerals and vitamins ● Describe a balanced diet chart ● Relate the states which alter energy requirement of individuals ● Identify the major nutritional problems of public health importance ● Differentiate types of PEM and recommend preventive and corrective measures ● Plan and assess the nutritional status of a 	<ul style="list-style-type: none"> ● Diagnose clinically the nutritional problems including iodine deficiency, anemia, fluoride deficiency, Marasmus & Kwashiorkor with their prevention on the basis of signs and symptoms according to relevant algorithm/ standard ● Assess anemia clinically ● Assess nutritional status in a community by anthropometry ● Inspect slaughter house, and observe characteristics of 	Flipped class room		MCQs SAQs OSCE

		<p>community</p> <ul style="list-style-type: none"> • Relate the epidemiological aspects of nutrition • Classify water- borne, meat- borne and milk- borne diseases • Identify & outline preventive measures for water borne, milk borne, and meat-borne diseases. • Calculate the energy requirement and basal metabolic rate in a given scenario Recognize/ explain nutritional hazards to which populations are exposed in emergency situations • Classify biological and social epidemiology of obesity • Correlate Immediate and delayed adverse effects of nutritional deficits with health status • Calculate and interpret obesity among adults on the basis of BMI • Plan individual and community- based methods of prevention and control of obesity. 	<p>fresh meat, fish, eggs etc.</p> <ul style="list-style-type: none"> • Advise on restructuring or modifying the energy requirements (through diet) in relation to physiological states • Communicate effectively, especially regarding behavior and life-style modification • Motivate and inform the individuals and community for prevention of obesity Revise/restructure and communicate diet plan, nutritional and lifestyle modification 			
5.	Partners in Health	<ul style="list-style-type: none"> • List various health agencies and describe composition and relate functions of different International Health agencies WHO, USAID, UNICEF, UNFPA to national and international care 		LGIS		MCQs SAQs

6.	School and Dental Health Service	<ul style="list-style-type: none"> ● Define School health Services and enlist objectives of school health ● Identify the duties of school medical officer, functions of SHS and role of teacher ● Identify and interrelate the common health problems of school children ● Identify the deficient health services and physical environment in schools using standardized checklist ● Interpret the components of school health ● Interpret dental problems ● Recommend control measures related to dental problems 	<ul style="list-style-type: none"> ● Provide First aid ● Diagnose, outline treatment & refer common ailments in school environment ● Motivate students for maintaining healthful lifestyle ● Inspect school and advise relevant modification(s) ● Educate school children for healthful behaviour 	LGIS, Small group discussion		MCQs SAQs, OSCE
7.	Injuries and accidents	<ul style="list-style-type: none"> ● Categorize different types of accidents ● Define and explain epidemiology and control of different types of accidents ● Relate risk factors with types of accident 	<ul style="list-style-type: none"> ● Formulate a health education program for local school/ community/ hospital/ workplace on prevention of accidents and promotion of safety measures ● Impart health education and knowledge for prevention of accidents and treatment of victims 	Flipped class room		MCQs SAQs

8.	Disaster management	<ul style="list-style-type: none"> • Define, classify and differentiate between different disasters • List duties of a disaster & emergency management health team and relate the role of medical officer in disaster setting • Advise on Rehabilitation and reconstruction Manage disaster utilizing knowledge of disaster management (POSDCORB), disaster impact and response, Mitigation • Relate the application of National Disaster Management and Preparedness guidelines according to given scenario 		Flipped class room	MCQs SAQs, OSCE
9.	Occupational Health	<ul style="list-style-type: none"> • Relate occupational health, occupational hygiene, ergonomics, occupational diseases & Injuries. • Relate occupational disease agents and factors (physical, chemical, biological, psychological, mental) with health • Identify factors or patterns in a patient's history that may indicate a work related contribution to ill health • Identify occupational hazards and suggest relevant control • Interpret Standardized Mortality Rate (SMR) with respect to particular 	<ul style="list-style-type: none"> • Motivate a worker to take preventive measures at work place e.g. regular use of personal protective equipment • Counsel health workers regarding safe practices and hygiene • Observe and assess the standards being implemented for safety • Diagnose clinically common work-related symptoms and disorders; refer to relevant specialist 	LGIS	MCQs SAQs OSCE

		trade				
10.	Snake bite	<ul style="list-style-type: none"> • Differentiate between signs and symptoms of different snake-bites • Recommend preventive measures against snake bites in particular situations. 	<ul style="list-style-type: none"> • Educate regarding snake-bite prevention • Diagnose clinically and refer snake-bite case in case of emergency 	LGIS		MCQs SAQs
11.	Current Health Programs in Pakistan	<ul style="list-style-type: none"> • Interpret the concepts of international days celebrations • Describe various programs and their components 		LGIS		SAQs
12.	Environmental Health	<p>Relate the bio- psycho-social model with different types of environment Relate the current environmental indicators to legislative guidelines and apply them for sustainable protection of environment in national, regional and global perspectives. Outline modifications for specific environments to prevent and control diseases Relate role of environment to hospital infections Relate physical hazards to various occupations or climatic conditions Identify personal protective measures for individuals and groups facing specific environmental hazards Identify and employ protective measures against the high-risk physical environment in the healthcare profession</p>	<ul style="list-style-type: none"> • Educate individuals/ communities on preventive environmental measures to maintain good health • Calculate the amount of chlorine required to disinfect water • Calculate the amount of disinfectants for different reservoirs • Collect water samples from different sources • Practice through role play on how to prevent or reduce undue harmful environmental exposure to themselves, patients and their attendants in given situation 	LGIS		MCQs , SAQs, OSCE

PATHOLOGY

S. No	Theme	Learning Outcomes	Learning Objectives	%tage	Teaching Methodology	Mode of Assessment
1.	The Endocrine System	Correlate the microscopic structure and physiology of endocrine gland disorders with their etiology and pathogenesis	<ul style="list-style-type: none"> • PituitaryGland • Thyroidgland • Parathyroidgland • Pancreas (endocrinepart) • Adrenalgland • Adrenalcortex • Adrenalmedulla • DiabetesMellitus 	25%	LGIS/SGD	MCQs & SEQs/SAQs
		Justify the importance of various biochemical markers in diagnosis of different endocrine disorders	<ul style="list-style-type: none"> • Pituitary Functiontest • Thyroid functiontest • Adrenal functiontest • Parathyroid glanddisorders • Biochemical diagnosis of infertility 			
2.	Central Nervous & Peripheral nervous system (Neuromuscular junction, skeletal muscle disorders and special sense of vision)	Correlate the morphology (Microscopic and macroscopic) of central and peripheral nervous system disorders* to their etiology and pathogenesis * Neuromuscular junction, skeletal muscle disorders and special sense of vision	<ul style="list-style-type: none"> • Disease of Neuro muscular junction • Diseases of Skeleta lmuscle • Peripheral nerve sheath tumors • Malformations and developmental disorders • Traumaticinjury • Cerebro vascular disease • Infections • Priondiseases • Demyelinating Diseases • Neuro degenerative diseases • CNS tumors • Retinalneo plasms 	20%	LGIS	MCQs& SEQs/SAQs
<u>Haematology</u>						

3.	Diseases of Lymph nodes, Spleen & thymus	<ul style="list-style-type: none"> • Differentiate between Hodgkin's and non-Hodgkin's lymphoma on the basis of etiology, morphology & pathogenesis • Compare various types of thymomas on the basis of their morphology 	<ul style="list-style-type: none"> • Hodgkin's lymphoma • Non-Hodgkin's lymphoma • Diseases of Thymus • Multiple Myeloma 	10%	LGIS/SGD	MCQs & SEQs/SAQs
		Justify the importance of biochemical markers in diagnosis of various hematological disorders	<ul style="list-style-type: none"> • Plasma Proteins 		SGD	MCQs
4.	Red blood cells and bleeding disorders	<ul style="list-style-type: none"> • Interpret the lab reports of patient with Red cell & coagulation disorders based on pathophysiology of disease • Analyze the hazards of blood transfusion • Appraise the rejection reactions associated with bone marrow transplantation 	<ul style="list-style-type: none"> • Anemias • Autoimmune, hemolytic anemia • Hemolytic anemia (HS, G6PD, SCD) • Thalassemias syndromes • Coagulation disorders (hemophilia, VWD) • Blood transfusion, RH incompatibility • Bone marrow transplantation Transplantation rejection 	15%	LGIS/SGD	MCQs & SEQs/SAQs
5.	Diseases of White blood cells	<ul style="list-style-type: none"> • Interpret the lab reports of patient with white cell disorders based on pathophysiology of disease 	<ul style="list-style-type: none"> • Non-neoplastic white cells disorders (infections, inflammation) • Overview and classification of neoplastic proliferation of WBCs 	15%	SGD	MCQs

6.	Diseases of Platelets	<ul style="list-style-type: none"> • Interpret the lab reports of patient with platelets disorders based on pathophysiology of disease 	<ul style="list-style-type: none"> • Bleeding diathesis platelet disorders • DIC, Thrombotic Thrombocytopenic purpura, HUS • Myeloproliferative disorders • Myelodysplastic syndrome 	15%	SGD	MCQs
				100		
	End Block Assessment	End Block Assessment to be taken by concerned institute itself Assessment tools: MCQs & SEQs				

PATHOLOGY - Practicals				
S No	Learning Outcomes	List of Practicals	Teaching Methodology	Assessment Methodology
1	Establish diagnosis by correlating findings of given slides with given scenarios	Multinodular goiter Follicular Adenoma Papillary Carcinoma thyroid Spectrophotometer Pleomorphic adenoma Salivary Gland Giant cell tumor, Osteosarcoma Leishman Stain Reticulocyte count RBCs disorders WBCs disorders Blood grouping Multiple Myeloma Hodgkin's lymphoma and Non-Hodgkin's lymphoma Tuberculous lymphadenitis	Practical	OSPE

ENT

S. #	Topic	Learning Objective At the end of the session students will be able to	MIT	Instructor	Assessment
1.	Diseases of the oral cavity and pharynx	<ul style="list-style-type: none"> ● Basic understanding of common disorders of oral cavity ● Differentiate & plan managements of various types of oral/pharyngeal lesions on the basis of history and clinical examination/ investigations ● Recognize mass arising from lateral margin of tongue suggest different treatment modalities on the basis of biopsy ● Investigate and manage sore throat and recurrent throat infections 	LGIS		MCQ/SEQ /SAQ/ OSCE/Viva
2.	Inflammatory diseases of pharyngeal lymphoid tissue	<ul style="list-style-type: none"> ● Identify various causes of sore throat ● Acquire knowledge of presentation and signs of acute and chronic tonsillitis and managements ● Suggest investigation; medical and surgical options in tonsillitis. ● Justify indication of tonsillectomy. ● Explain techniques of tonsillectomy/ adenoidectomy ● Diagnose/ manage a case of adenoids. 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva
3.	Differential diagnoses white patch on the tonsil	<ul style="list-style-type: none"> ● Recognize a white patch on the tonsil/soft palate/ and oral mucosa. ● investigate and manage the pathology 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva
4.	Abscess around the pharynx	<ul style="list-style-type: none"> ● Reproduce the applied anatomy of facial planes of the neck ● Suspect abscesses around the pharynx on the basis of symptoms/ signs and findings. ● Differentiate between various abscesses {retro pharyngeal, parapharyngeal, peritonsillar, submandibular (Ludwig`s angina)}. ● Suggest investigations and managements. 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva

5.	Tumor of oropharynx	<ul style="list-style-type: none"> Recall common sites of tumor of larynx. Suspect a tumor of oropharynx on the basis of history, signs and symptoms. Plan investigation and management. 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva
6.	Miscellaneous condition of the ENT	<ul style="list-style-type: none"> Recall anatomy and physiology of salivary glands. Differentiate between various lesions effecting salivary glands on the basis of history, presentation and findings and choose management plan. 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva
7.	Disease of larynx I	<ul style="list-style-type: none"> Recall knowledge of infantile, adult male and female larynx. Detect congenital anomalies effecting larynx and management plans Assess trauma involving larynx and plan management. Identify foreign bodies in air passages. Apply Immediate (Heimlich`s maneuver) or “bear Hug” and planed managements Recall the knowledge of vocal nodules on basis of history and advise management plan and counseling. 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva
8.	Disease of larynx II	<ul style="list-style-type: none"> Differentiate various Inflammatory diseases of larynx; (acute and chronic laryngitis of various types; acute epiglottitis; acute laryngotracheobronchitis) Differentiate between different casus of hoarseness and stridor on the basis of signs and symptoms; decide relevant investigations; suggest treatment modality for hoarseness and stridor 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva
9.	Miscellaneous condition of larynx	<ul style="list-style-type: none"> Recall nerve supply of the larynx Differentiate between different casus of hoarseness and stridor on the basis of signs and symptoms ;outline relevant investigations; suggest treatment modality of vocal cord paralysis Differentiate between vocal cord polyps and papillomas on the basis of history and findings and plan managements 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva

10.	Tumor of larynx	<ul style="list-style-type: none"> ● Recall the surgical anatomy of larynx ● Suspect a case of carcinoma larynx on the basis of history. ● Justify investigations and treatment plan in a case of carcinoma larynx ● Advise pre and post treatment (conservative and surgical) and counseling of these patients. 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva
11.	Tracheostomy	<ul style="list-style-type: none"> ● Recall the knowledge of Indications, operative techniques, post operative care and complications of tracheostomy ● Evaluate indications of laryngotomy and tracheal intubation. ● Justify indications for percutaneous tracheostomy and laryngeal mask application. 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva
12.	Neck masses	<ul style="list-style-type: none"> ● Differentiate between different types of neck masses on the basis of symptoms and findings. ● Advise relevant Investigations and management plan. ● Recall distribution and drainage area of neck lymph nodes ● DD of lateral neck masses ● DD of lymph node enlargement in neck ● Work-up for a suspected metastatic lymph node ● Thyroid gland enlargement assessment and management plan. 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva
13.	Disease of Esophagus	<ul style="list-style-type: none"> ● Recall normal swallowing mechanism ● Types of dysphagia, causes and pathophysiology of each cause. ● Revisit the applied anatomy and physiology of esophagus ● Differentiate between various types of dysphagia based on its etiology and pathophysiology. ● Plan investigation and management. 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva
14.	Advances in ENT/Neck surgeries	<ul style="list-style-type: none"> ● Advise various imaging i.e. plain, contrast studies, CT scan, MRI and or other relevant investigations. ● Reproduce the basic concept about recent 	LGIS		MCQ/ SEQ /SAQ/ OSCE/ Viva

		<p>trends in different ENT treatment modalities like Laser Surgery, Cryosurgery, HIV Infection/ AIDS & ENT managements</p> <ul style="list-style-type: none"> ● Physics and physiology of LASER surgery and Cryosurgery ● Basics of HIV and AIDS infection. ● Radiotherapy / Chemotherapy for Head & Neck Cancer ● Basics of Radiotherapy and Chemotherapy in head and neck cancers. ● Functional endoscopic sinus surgery (FESS). BERA (brain stem evoked response audiometry). 			
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References:

1. Diseases of Ear, Nose , and Throat Head and Neck Surgery by PL Dhingra. Shruti Dhingra 6th Edition.
2. Logan Tuner`s Diseases of the nose Throat and Ear head and Neck Surgery by S. Musheer Hussain 11th Edition
3. Essential of ENT Examination (Principles & Treatment by J.T.Shah, Nishit Shah 3rdEdition
4. Clinical and Operative Methods in ENT and head & neck Surgery 2nd Edition

Ophthalmology
Y4B3

At the end of block 3 the students of 4th year MBBS should be able to:

1. Discuss different features of diabetic eye disease.
2. Manage a case of diabetic retinopathy.
3. Identify different retinal vascular and macular disorders.
4. Discuss differential diagnosis of leucocria.
5. Identify strabismus and know principles of management of different type of squint (Strabismus).
6. Discuss management of chemical injury.
7. Identify features of blunt and penetrating ocular truma.
8. Discuss visual pathway and its pathologies.
9. Discuss different optic nerve palsies related to eye.
10. Identify different causes of visual loss.

S.#	Topic	Learning Objective At the end of the session students will be able to	MIT	Instructor	Assessment
1.	Diabetic retinopathy	<ul style="list-style-type: none"> • Understand the pathophysiology of diabetic retinopathy. • Know the basis of different signs and symptoms of diabetic retinopathy. • Can elaborate the classifications of diabetic retinopathy and maculopathy. • Know management of different stages of diabetic retinopathy. 	LGIS		MCQ/ SEQ
2.	Retinal vascular diseases and macular disorders.	<ul style="list-style-type: none"> • Know basis of hypertensive retinopathy. • Recognize the pathophysiological basis of retinal vascular occlusions. Understand different treatment options for retinal vascular occlusions. • Explain management of different macular disorders 	LGIS		MCQ/ SEQ
3.	Pediatric Vitreoretina	<ul style="list-style-type: none"> • Know differential diagnosis of leucocoria. • Explain management of retinoblastoma. • Understand the basis and management of retinopathy of pre-maturity. 	LGIS		MCQ/ SEQ

4.	Strabismus	<ul style="list-style-type: none"> • Know the anatomy of extraocular muscles. • Understand different physiological phenomenon in binocular muscular balance. • Explain management of different types of squint. 	LGIS		MCQ/ SEQ
5.	Ocular Trauma: Blunt	<ul style="list-style-type: none"> • Classify different types of ocular injuries. • Know different ocular presentations in blunt ocular trauma • Understand management of cases of blunt ocular trauma. 	LGIS		MCQ/ SEQ
6.	Ocular Trauma: penetrating and IOFB	<ul style="list-style-type: none"> • Know different types of penetrating ocular injuries. • Understand the management of different penetrating ocular injuries. • Recognize features of different intraocular foreign bodies 	LGIS		MCQ/ SEQ
7.	Chemical injuries and Orbital fractures	<ul style="list-style-type: none"> • Know the pathogenesis of chemical injuries. • Recognize different grades of chemical injuries. • Explain the management of chemical injuries. • Know different types of orbital fractures and their management. 	LGIS		MCQ/ SEQ
8.	Neuro-Ophthalmology : introduction, visual pathway and cranial Nerve pathways.	<ul style="list-style-type: none"> • Recall the visual pathway. • Explain different visual field defects. • Know pathways of cranial nerves supplying extraocular muscles. • Recognize different clinical conditions of nerve palsies. 	LGIS		MCQ/ SEQ

9.	Neuro-Ophthalmology : pupil and miscellaneous disorders	<ul style="list-style-type: none"> Recall the pupillary reflex Pathway. Explain different pupillary disorders and their pathogenesis. Know classification and management of optic neuritis Recognize papilloedema and its causes. 	LGIS		MCQ/ SEQ
10.	Visual loss	<ul style="list-style-type: none"> Know different causes of visual loss. Interpret different clinical scenarios in order to diagnosis the cause of visual loss. 	LGIS		MCQ/ SEQ



- Robbins Basic Pathology, 10th ed.& Robbins and Cotran Pathologic Basis of Disease, 9th Edition.
- Robbins Atlas of Pathology 3rd edition & Robbins Basic Pathology 10th edition.
- Diseases of Ear,Nose, and Throat Head and Neck Surgery by PL Dhingra . Shruti Dhingra 6th Edition.

- Logan Turner's Diseases of the nose Throat and Ear head and Neck Surgery by S. Musheer Hussain 11th Edition
- Clinical ophthalmology, a systematic approach by Jack J. Kanski, 8th Edition.
- General ophthalmology by Vaughan & Asbury, 18th edition.
- Clinical ophthalmology by Shafi M. Jatoi, 5th Edition.

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Reference

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