AYUB MEDICAL COLLEGE

ABBOTTABAD

DEPARTMENT OF MEDICAL EDUCATION

BLOOD & IMMUNOLOGY II

3RD YEAR MBBS

BLOCK: H

DURATION: 3 WEEKS

FROM: 2023

STUDENT NAME

_____

DISCLAIMER

- Developing a study guide is a dynamic process and undergoes iteration according to the needs and priorities.
- This study guide is subjected to the change and modification over the whole academic year.
- However, students are advised to use it as a guide for respective modules.
- It is to declare that the learning objectives (general and specific) and the distribution of assessment tools (both theory and practical) are obtained from Khyber Medical University, Peshawar. These can be obtained from: https://kmu.edu.pk/examination/guidelines
- The time tables are for guiding purpose. It is to advise that final timetables are always displayed over the notice boards of each lecture hall.
- Students are encouraged to provide feedback via coordinator

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1. Module Committee:

s.no	Name	Department	Role
1.	Prof. Dr. Umar Farooq	CEO & Dean	
2.	Prof. Dr. Irfan U. Khattak	Director DME	
Module Team			
3.	Prof Haq Nawaz	Pharmacology	Block H Coordinator
4.	Dr. Afsheen Siddiqi	Pharmacology	Module Coordinator
5.	Dr. Romana	Pathology	Co-Developer
6.	Dr. Omair Khan	Forensic Medicine	Co- Developer
7.	Dr. Zeeshan Haroon	Community Medicine	Co- Developer
8.	Dr. Asfand	Physiology	Co- Developer
9.	Dr. Saima Bibi	Paediatrics	Co- Developer
10.	Dr. Rashid	Medicine	Co- Developer
11.	Miss Ayesha	Prime/Research	Co- Developer

2. What Is A Study Guide?

It is an aid to Inform students how student learning program of the module has been organized, to help students organize and manage their studies throughout the module and guide students on assessment methods, rules and regulations.

The study guide:

- Communicates information on organization and management of the module.
- This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings.

Module objectives.

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

Achievement of objectives.

- Focuses on information pertaining to examination policy, rules and regulations.

3. Recommended List of Icons

Introduction To Case

For Objectives

Critical Questions

Assessment

Resource Material

4. Organization of Module

Introduction:

This module is an integration of pathophysiological aspects of blood and immunology. It deals with the pathogenesis and treatment of different types of anemias, hematological disorders, malignancies and abnormalities of immune system. Hematological diseases are quite frequently encountered in adults & pediatric population. These range from simple nutritional anemias to complex diseases and hematological malignancies. This module also focusses on Thalassemia, a very common cause of hemolytic anemia in children. Lectures, practical work and field visits are incorporated in the module to enhance the clinical skills of learners.

Rationale

Learning blood and immunological disorders as a part of medical curriculum is essential because any type of their disturbance affects the total body health. Principles, concepts and skills gained in this module will help the students to make correlation of basic knowledge learnt in the theory classes with lab work and field visits.

6. Learning Objectives

Themes	Disciplines (MITs)	Duration
Pallor & Fatigue	Physiology, Pathology, Pharmacology, Forensic Medicine, Community Medicine, Paediatrics, Medicine (Lectures, practical work and field visits)	1 week
Fever	Physiology, Pathology, Pharmacology, Forensic Medicine, Community Medicine, Paediatrics, Medicine (Lectures, practical work, field visits, academic writing & plagiarism)	1 week
Bleeding	Physiology,Pathology,Pharmacology,Forensic Medicine, Medicine & Prime (Lectures, lab work)	1 week

General Learning Outcomes

By the end of Blood & Immunology II Module, 3rd year MBBS students will be able to:

1. Describe the pathophysiology and diagnosis of different types of anemia.
2. Explain the pathogenesis of different hematological malignancies.
3. Discuss the diagnostic approach to malignant hematological disorders.
4. Discuss the pathophysiology and diagnosis of bleeding disorders.
5. Explain the immune system of the body and its components.
6. Describe the mechanism of defense from infection.
7. Explain hypersensitivity and allergy.
8. Discuss the rationale for immunomodulation and its impact on improving the therapeutic dynamics of autoimmune disorders and malignancies.
9. Describe the drugs for treating various types of anemia.
10. Write prescription for the prevention and treatment of iron-deficiency anemia.
11. Describe the application of blood groups in Forensic work
12. Describe the examination of blood stains
13. Describe the medico legal importance of blood as trace evidence
14. Describe the EPI schedule of Pakistan and the basic principles of Immunization.
15. Describe the most prevalent anemia's that affect the population of Pakistan, and the risk factors for vulnerable population.

16. Describe the most prevalent blood borne infections that affect the population of Pakistan, and the appropriate preventive strategies including safe blood practice.

Theme 1: Pallor and Fatigue				
Subject	**Topic**	**Learning objectives**	**MIT**	**No. of hrs**
Physiology	Red blood cells	Discuss the steps of erythropoiesis with Correlation to red cell indices and its clinical implications.	LGF	1
Pathology	1- Anemia	Discuss physiologic basis of anemia.	LGF	1
		Classify anemia's according to underlying Mechanism		
	Iron deficiency anemia	Discuss the pathophysiological mechanism of Iron deficiency anemia		
		Describe the clinical course and morphological changes in Ida		
		Explain laboratory investigations for the diagnosis of IDA		
	Blood loss	Describe the pathogenesis of blood loss Anemia		
	2- Megaloblastic Anemia	Describe Megaloblastic Anemia	L G F	1
		Describe the pathogenesis of MA with respect to Vitamin B12 and Folic acid		
		Discuss the morphological changes in RBCs, WBCs and platelets in MA.		
		Explain how will you diagnose the cause of MA?		
	3-Hereditary Spherocytosis	Discuss the pathogenesis of Hered1itary Spherocytosis	LGF	1
		Describe morphological changes in peripheral Smear of HS patient		
		Explain how will you diagnose a case of HS?		
	4-Sickle cell Anemia	Discuss the morphology of RBCs in Sickle cell Anemia	L G F	1
		Describe the etiology and pathogenesis in SA		
		Explain how will you diagnose a case of SA?		
	5- Thalassemia	Describe Thalassemia	LGF	1
		Discuss the conditions contributing to the Pathogenesis of beta- thalassemia		
		Explain the genetics of thalassemia		

		Describe the morphological changes physically And on peripheral smear		
		Explain how will you diagnose a case of alpha Or beta thalassemia?		
	6-Glucose 6 phosphate dehydrogenase	Classify G6PD	LGF	1
		Discuss the pathogenesis of G6PD with Reference to oxidative injury of rbcs		
	deficiency	Describe the morphology of rbcs in G6PD		
		Explain how will you diagnose a case of G6PD Deficiency		
	7- Paroxysmal Nocturnal Hemoglobinuria	Describe the pathophysiology of Paroxysmal Nocturnal Hemoglobinuria	LGF	1
		Explain the diagnosis of a case of PNH?		
	8- Immune hemolytic anemia's	Classify immune hemolytic anemia's	LGF	1
		Discuss the etiological mechanism of warm and cold antibody immune hemolytic anemia		
		Explain the diagnostic workup of immune Hemolytic anemia		
	9- Aplastic Anemia	Enumerate causes of Aplastic anemia	LGF	1
		Describe the pathophysiology of aplastic anemia		
		Diagnose a case of aplastic anemia		
	10- polycythemia vera	Discuss the pathophysiology of polycythemia vera	LGF	1
		Describe the clinical course and morphological features of Polycythemia vera		
		Explain how will you diagnose a case of Polycythemia vera?		
	11- Transfusion Medicine	Describe various blood component preparation	LGF	1
		Identify indications for different blood components		
		Describe transfusion reactions associated with blood transfusion		
PHARMACOLOGY	1-Drugs used in anemia	Classify the drugs used in anemia	LGF	1
		Describe pharmacokinetics of Iron		
		Describe the various oral and parenteral formulations of iron		
		Describe the adverse effects of iron therapy		
		Describe the drug treatment of Iron toxicity		

	2-Drugs used in anemia(Role of various medications)	Describe the various oral and parenteral preparations of cyanocobalamin (Vit B12)	L G F	1
		Describe the clinical use of cyanocobalamin (Vit: B12)		
		Describe the clinical use of Folic acid		
		Describe the pharmacological rationale of combining cyanocobalamin with folic acid and iron		
		Describe the role of granulocyte colony stimulating factors (Filgrastim) and granulocyte monocyte colony stimulating factors in the treatment of leucopenia.		
		Describe the role of thrombocyte colony stimulating factor (Oprelvekin) in the treatment of thrombocytopenia.		
FORENSIC MEDICINE	1- FORENSIC EVIDENCE	Describe trace evidence	LGF	1
		Classify trace evidence.		
		Describe Locard's exchange principle.		
		Describe composition of blood and characteristics of different blood cells.		
		Describe basic genetic principles related to blood groups and blood groups as hereditary factors.		
	2-BLOOD GROUP SYSTEMS	Describe different blood groups systems. ▪ Grouping based on red cell antigens ▪ Grouping based on blood proteins ▪ Grouping based on enzymes ▪ Grouping based on white cell antigens. ▪ Describe different methods for blood group determination. ▪ Direct agglutination ▪ Ring test ▪ Gel diffusion ▪ Immune-electrophoresis ▪ Indirect agglutination	LGF	1

	3-BLOOD GROUP SYSTEMS(Medicolegal importance)	Describe the application of blood in forensic work. (medico legal importance) ▪ Inheritance claims ▪ Rh hazards ▪ Transfusion errors and adverse reactions ▪ DNA profiling ▪ Disputed paternity and maternity	LGF	1
COMMUNITY MEDICINE	Epidemiology of nutritional anemias	Classify nutritional anemias	LGF	1
		Describe the population at risk of nutritional anemia in Pakistan.		
		Explain effective public health strategies for prevention of nutritional anemias in in Pakistan		
		Describe risk factors for different nutritional anemia's.		
		Describe effective public health strategies for prevention of different types of anemia's in Pakistan		
PAEDIATRICS	Thalassemia	Describe Classification, Laboratory Investigation and management of Thalassemia	LGF	1
MEDICINE	Sickle Cell Anemia	Discuss the pathophysiology, investigations and management of Sickle Cell Anemia.	LGF	1
Theme 2: Fever				
Subject	**Topic**	**Learning objectives**		
Physiology	White blood cells	Classify the different types of white blood cells, Polymorph's, Lymphocytes and Plasma cells and their disorders.	LGF	1
Pathology	1-Acute myelogenous leukemia	Classify acute myelogenousleukemias according to FAB.	LGF	1
		Discuss the pathophysiology of AML.		
		Describe the morphological features of AML.		
		Explain how will you proceed for diagnosis of AML?		
	2- Chronic myelogenous leukemia	Discuss the pathophysiology of CML.	LGF	1
		Describe the peripheral blood findings in CML		
		Explain how will you proceed for diagnosis of CML?		
	3-Acute lymphocytic	Discuss the pathophysiology of Acute lymphocytic leukemia	LGF	1
		Discuss the morphological features of ALL		

	leukemia	Explain how will you diagnose a case of ALL?		
	4-Chronic lymphocytic leukemia	Discuss the pathophysiology of Chronic lymphocytic leukemia	LGF	1
		Describe the distinguishing morphological features of CLL		
		Explain the diagnostic workup for a case of CLL		
	5-Hodgkin' s lymphoma	Discuss the type of multiple myeloma	LGF	1
		Enlist the clinical features		
		Classify Hodgkin'slymphoma		
		Discuss the etiology and pathogenesis of Hodgkin's lymphoma		
		Describe the morphological changes and clinical course of the disease in Hodgkin's Lymphoma		
	6-Non-hodgkin' s lymphoma	Enlist Non-Hodgkin's lymphoma	LGF	1
		Describe the basic pathologic classification of NHL (the WHO classification).		
		Describe the predisposing factors to developing NHL, including infectious agents associated with development of specific lymphomas.		
		Describe the morphologic features of lymph nodes involved in Non-Hodgkin Lymphoma		
		Enlist the lab investigations required for diagnosis of NHL		
	7-Myelodysplastic syndrome (mds)	Enlist types of MDS.	LGF	1
		Discuss causes, pathogenesis and Morphology.		
		Interpret blood and bone marrow changes in patient with MDS.		
		Discuss symptoms and diagnostic strategies for patient with MDS.		
	Lymphoid neoplasms	Enumerate Lymphoid neoplasm		
		Classify lymphoid neoplasms according to WHO classification.		
	8-Plasma cell disorder	Describe the pathogenesis of multiple myeloma	LGF	1
		Describe the molecular genetics involved in multiple myeloma		
	9-Immunity	Describe the functions and types of immunity.	LGF	1
		Enlist the three lines of defenses and outline		

		their properties		
		Describe the characteristics, origin and functions of cells of immune system		
		Compare innate and acquired immunity		
		Compare the mechanism of active and passive immunity		
	10-Humeral immunity	Describe the role of T and B lymphocytes in immunity	LGF	1
		Describe the role of B lymphocytes in humeral immunity		
		Describe humeral immunity		
		Explain how helper T cells regulate the immune system		
		Differentiate between humeral and cell mediated immunity		
	11-Cell mediated immunity	Explain the Specificity of immune response	LGF	1
		Describe cell mediated components of Cell mediated immunity (CMI),		
		Explain types of cells in CMI system		
		Describe T-cell activation and diversity		
		Illustrate Schematic representation of T cell activation and diversity		
		Differentiate between Primary and secondary immune response		
	12-Antibodies	Describe antigen and antibodies.	LGF	1
		Differentiate B/W Monoclonal and polyclonal antibodies.		
		Classify immunoglobulin		
		Illustrate structure (diagram) of immunoglobulin A.		
		Describe important functions of immunoglobulin		
		Explain How antibodies neutralize toxins, microbes and viruses		
		Illustrate class switching of immunoglobulin		
		Explain transfer of immunity from mother to fetus and from mother to infant during breast-feeding		
	13-Allergy & hypersensitivity	Describe the pathophysiology of allergy and hypersensitivity with examples	LGF	1
		Compare immediate and delayed hypersensitivity reactions		
		Enlist the diseases associated with hypersensitivity reactions		

	14- Immune tolerance	Describe Immunotolerance.	LGF	1
		Describe Immunological unresponsiveness of the body especially to self-antigens.		
		Explain the role of immune system in protecting the human body.		
		Distinguishing between types of immunotolerance		
		Explain the mechanism of graft rejection and graft vs host disease.		
	15-Autoimmune diseases	Describe Autoimmunity.	LGF	1
		Discuss Pathogenesis of Autoimmune diseases.		
		Explain the factors leading to Autoimmune Diseases.		
	16- Immuno deficieny diseases	Describe immunodeficiency	LGF	1
		Differentiate between Autoimmune and immunodeficiency diseases.		
		Classify Congenital and acquired Immunodeficiency diseases.		
		Describe the pathogenesis of HIV.		
	17- COMPLEMENT	Describe complement.	LGF	1
		Describe components of the Complement System		
		Describe the synthesis of complements		
		Describe pathways of activation and inactivation of complement		
		Describe important functions of each component of complement system		
		Describe the diseases associated with deficiency of the complement proteins		
	18- Applied Immunity		LGF	1
PHARMACOLOGY	1- Immune modulator drugs	Classify immunomodulating drugs	LGF	1
		Describe the role of corticosteroids as immunosuppressant agents.		
		Describe mechanism of action of immunophilin ligands.		
		Describe clinical uses and adverse effects of immunophilin ligands.		
		Describe mechanism of action of enzyme inhibitors.		
		Describe clinical uses and adverse effects of enzyme inhibitors.		

		Describe mechanism of action of cytotoxic agents as immunosuppressant		
		Describe clinical uses and adverse effects of cytotoxic agents		
		Describe mechanism of action of immunosuppressive antibodies used as immunosuppressant		
		Describe clinical uses and adverse effects of immunosuppressive antibodies		
		Describe mechanism of action of monoclonal antibodies		
		Describe clinical uses and adverse effects of monoclonal antibodies		
	2- Immunostimulants	Describe mechanism of action of immunostimulant drugs	LGF	1
		Describe clinical uses and adverse effects of immunostimulant drugs		
		Describe the advantages and disadvantages of various combinations of Immuno- modulating drugs		
Prime/research	Academic writing and plagiarism	Emphasize the role of academic writing in research	LGF	1
		Explain the role of “Grammarly” for use in academic writing		
		Define plagiarism		
		Enlist plagiarism detection software		
Forensic medicine	Forensic Lab Procedures	Describe Forensic Lab Procedures · Forensic histopathology · Naked eye examination · Histological examination · Forensic histochemistry · Steam distillation · Micro-diffusion analysis · Stas-Otto method · Colour reaction method · Chromatography · Spectroscopy · Electrophoresis · Radio-activation technique · Detection of insecticide compounds	LGF	1
Community	1-Immunization	Define immunity	LGF	1
		Explain the types of immunity		

medicine		Discuss immunizing agents		
		Explain the hazards of immunization		
		Explain the cold chain in the context of immunization		
	Vaccination	Explain the importance of vaccination in the control of infectious diseases		
		Describe the basic principles of vaccination		
		List the main types of vaccine and illustrate them with examples		
		Describe vaccines that are associated with adverse reactions		
		Explain the difference between live attenuated and inactivated vaccines		
		Describe the role of vaccines in preventing disease.		
		Differentiate between vaccination and immunization		
		Describe the strategies used from community medicine's perspective to promote vaccination in communities. (EPI)		
		Explain various programs of vaccination in Pakistan with particular reference to EPI.		
		Describe the factors responsible for success and failure of vaccination programs in Pakistan.		
	2-Epidemiology of blood borne diseases/infections	List the important blood borne diseases in Pakistan as prioritized by the National Institute of health (NIH)	LGF	1
		Discuss the global burden of blood borne diseases & compare with Pakistan		
		Describe important blood borne pathogens		
		Explain the evidence based public health practices to reduce transmission of blood borne infectious disease		
		Explain the evidence based best practices and procedures for safe blood transfusion and prevention of needle stick injury		
MEDICINE	Myeloproliferative Disorders (MPN)	Classify myeloproliferative neoplasms.	LGF	1
		Discuss the investigations & management steps of CML.		

Theme 3: Bleeding				
Subject	**Topic**	**Learning objectives**		
Physiology	Platelets	Enumerate the causes of thrombocytopenia.	LGF	1
		Explain the intrinsic and extrinsic pathways of Coagulation		
Pathology	1- Thrombocytopenia & von willebrand disease	Enlist causes of Thrombocytopenia	LGF	1
		Describe the pathogenesis of immune thrombocytopenic purpura		
		List thrombotic microangiopathies		
		Explain the diagnostic plan for ITP		
		Classify VWD		
		Enlist investigations required for diagnosis of VWD		
	2-Hemophilia	Discuss the pathogenesis of hemophilia A and B	LGF	1
		Describe the clinical course of the disease.		
		Enlist the laboratory investigation for diagnosing a case of hemophilia		
	3- Disseminated intravascular coagulopathy	Enlist major disorders associated with DIS	LGF	1
		Discuss the pathophysiology of DIC		
		Explain the morphological changes in DIC		
		Explain how will you diagnose DIC?		
Pharmacology	Anti-plasmin (antifibrinolytic) drugs	Describe mechanism of action of Anti-plasmin (antifibrinolytic) drugs	LGF	1
		Describe clinical uses and adverse effects of Anti-plasmin (antifibrinolytic) drugs		
	Drug treatment of Haemophilia	Describe the drug treatment for various types of Haemophilia		
		Describe the role of Desmopressin in the treatment of haemophilia		
Forensic medicine	1-Blood stains	Describe examination of blood stains. · Physical examination · Chemical examination · Physicochemical examination · Micro chemical examination · Spectroscopic examination · Immunological and enzymological methods for species determination	LGF	1

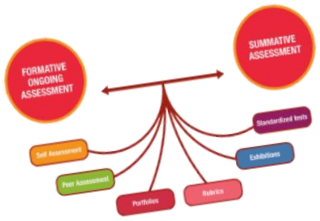
		Describe the medico legal importance of blood stains.		
	2-Collection And Preservation Of Biological Material	Describe the collection and preservation of biological material · Blood · Swabs and smears · Saliva . Semen	LGF	1
Medicine	Platelets (itp)	Describe Clinical features, investigations and management of a patient with Immune Thrombocytopenia (ITP).	LGF	1
PRIME/Medical education	1-Principles of medical ethics	Explain the pillars of medical ethics		
		Explain the privacy and confidentiality of the patients and its medico-legal and cultural aspects	LGF	1
	2-Confidentiality	Exhibit Confidentiality of colleagues and patients	LGF	1
		Appropriately use of social media		
Practical Work				
Subject	**Topic**	**Learning objectives**	**Hours**	
		Theme 1		
Pathology	1-Normal complete Blood count	Differentiate between a normal blood cells of different lineages	2	
	ABNORMAL PERIPHERAL SMEAR IN DIFFERENT ANEMIAS	Differentiate between a normal and an abnormal RBC		
		Identify different shapes of RBCs.		
		Identify the common types of Anemia on the basis of RBC morphology		
	2-Normal white cell smear	Describe causes of leukocytosis Differentiate different types of white blood cells under microscope	2	
Pharmacology	Iron-deficiency anemia	Write prescription for a patient at risk of developing iron-deficiency anemia	2	
		Write Chart order for treating an in-door patient with iron-deficiency anemia		
Field visit	Visit to blood bank of a tertiary care hospital	Explain safe blood transfusion practices	2	
		List the common pathogens that cause blood borne infections which may be acquired from unsafe		

		blood transfusion practices.	
		List the most common transfusion reactions seen in a blood bank in a local teaching hospital in Pakistan	
		Communicate with health care staff effectively	
		Describe the standard operating procedures (SOP's) of blood transfusion	
Forensic medicine	1-Microscopic examinatio n of animal and human blood	Perform Microscopic examination of animal and human blood.	2
	2-Examinatio n of blood stains under ultraviolet light	Perform examination of blood stains under ultraviolet light.	2
	3-Different pattern of stains	Identify different pattern of stains.	2
Field visit	Visit to basic health care unit EPI Center	Observe administration of different vaccines as part of Expanded Program of immunization	2
		(EPI) schedule of Pakistan at the vaccination center.	
		List and explain the route of administration and mechanism of storage and maintenance of cold chain of each vaccine in the EPI schedule (support with images where possible)	
		List the different components of each vaccine in the EPI schedule including the adjuvants, preservatives and explain their relevance to the vaccine.	
		Differentiate between live attenuated vaccines, conjugate vaccines, subunit vaccines, and toxoid vaccines in the EPI schedule and their mode of action	
		Identify the contraindications for vaccination that may present an additional risk	
		Describe the organ gram of EPI center	

		Explain the role of EPI center.	
		Observe the process of vaccination on a case.	
Pathology	Coagulation tests	Interpret Prothrombin time and activated partial thromboplastin time	2
		Interpret bleeding time and clotting time	

Hours Distribution	
Theory	
Discipline	**No. of hours**
Physiology	03
Pathology	32
Pharmacology	05
Forensic Medicine	06
Community Medicine	03
General Medicine	03
Pediatrics	01
PRIME	03
Total	**56**
Practical/ SGDs	
Pathology	06
Community Medicine	04
Pharmacology	02
Forensic Medicine	06
Total	**18**

Hours Distribution			
Discipline	**No. of hours**		**Total**
	Theory	**Practical/ field visits**	
Physiology	03	X	03
Pathology	27	06	33
Pharmacology	04	02	06
Forensic Medicine	06	04	10
Community Medicine	03	04	07
General Medicine	03	X	03
Pediatrics	01	X	01
PRIME	03	X	03
Total	**50**	**16**	**66**



7. Examination and Methods of Assessment:

The year-3 will be assessed in 3 blocks.

1) Block-1 (Foundation 2 and Infection and Inflammation modules) will be assessed in **paper-G.**
2) Block-2 (Multisystem, blood and MSK modules) will be assessed in **paper-H.**
3) Block-3 (CVS and Respiratory module) will be assessed in **paper-I.**
4) Each written paper consists of 120 MCQs.
5) Internal assessment will be added to final marks in KMU.
6) In OSPE, each station will be allotted 6 marks, and a total of 120 (+10% marks of internal assessment) marks are allocated for each OSPE/OSCE examination.
7) Practical assessment will be in the form of OSPE/OSCE which will also include embedded viva stations. The details of each section are given in the tables given below.

Table-1: Total Marks Distribution 3rd Year MBBS

Assessment Plan of 3rd Year MBBS						
Theory paper	**Modules**	**Theory marks**	**Internal assessment theory (10%)**	**OSPE/OSPE**	**Internal assessment OSPE/OSPE(10%)**	**Total Marks**
Paper G	Foundation-II Inf.&Inflamm.I	120	14	120	14	268
Paper H	Multisystem I Blood II MSK-II	120	13	120	14	267
Paper I	CVS-II Respiratory-II	120	13	120	12	265
Total Marks		360	40	360	40	800

Paper-H (Multisystem, Blood and MSK)

MCQs

Subject	Multisystem-1 module	Blood and Immunology-2	Musculoskeletal (MSK)-2 module	Total MCQs
Pharmacology	12	03	05	20
Pathology	16	22	13	51
Forensic medicine	09	02	09	20
Community medicine	03	04	03	10
ENT			01	01
Eye			01	01
PRIME			01	01
Research			05	05
Medicine	01	02	02	05
Orthopedics			02	02
Pediatrics		01	03	04
Total	41	35	44	120

OSPE

Subject	OSPE/OSCE	Viva stations	Total*
Pharmacology	5	2	7
Pathology	3	2	5
Forensic medicine	2	2	4
Community medicine	0	2	2
Paeds (history and physical examination)	1	0	1
Medicine (history and physical examination)	1	0	1
Total	12	8	20

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

INTERNAL ASSESSMENT CARD
PHARMACOLOGY DEPARTMENT

Class Roll No._____
Date of Admission in Ist year. _____
Name_____
Father's Name_____
Father's Occupation_____Domicile_____
Phone No. Guardian._____ Student Phone_____
Present address: _____
_____

PAST ACADEMIC RECORD FIRST POFESSIONAL EXAMINATION ANNUAL/SUPPLY

Paper A	Session -	Marks-
Paper B	Session -	Marks-
Paper C	Session -	Marks-

PAST ACADEMIC RECORD 2ND POFESSIONAL EXAMINATION ANNUAL/SUPPLY

Paper D	Session -	Marks-
Paper E	Session -	Marks-
Paper F	Session -	Marks-

3RD YEAR M.B.B.S.& ASSESSMENTS OF ATTENDANCE

BLOCK	MODULE	TOTAL HOURS	HOUR ATTENDED	PERCEN-TAGE	MARKS OBTAINED
Block G	Foundation-II				
	Inflammation & infection				
Block-H	Multisystem				
	MSK II				
	Blood II				
Block-I	Respiration				
	CVS				

PROFESSOR DR. SUMBAL TARIQ
Chairperson
Deptt: of Pharmacology & Therapeutics
Ayub Medical College Abbottabad.

Permanent
Mailing Address: Roll No._____
To,

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8. Learning Opportunities and Resources

8.1 Books:

- **Pharmacology**
- Basic & Clinical Pharmacology, 14th edition
- Goodman Gilman's The Pharmacological Basis of Therapeutics, 13th edition
- Lippincott Illustrated Reviews Pharmacology, 7th edition
- **Paediatrics**
- Nelson textbook of Pediatrics,21st edition
- Textbook of Pediatrics, Pakistan Pediatrics Association
- Basis of Pediatrics, Pervez Akbar khan, Ninth edition
- **Prime/Research**
- Essentials of research design and methodology. (Geoferry Marczyk)
- The essentials of clinical epidemiology (Robert H)
- **Medicine**
- Davidson's Principles and Practice of Medicine
- Kumar and Clarks Clinical Medicine
- **Forensic Medicine**
- Principles and practice of Forensic Medicine by Naseeb R awan
- Text book of Forensic Medicine and Toxicology by Nagesh Kumar G Rao.
- Praikhs textbook of medical jurisprudence and toxicology
- **Community Medicine**
- Public Health & Community Medicine by Shah Ilyas Ansari; 8th Edition
- Parks Textbook of Prevention & Social Medicine by K.Park; 25th Edition
- **Pathology**
- Hoffbrads Essential Hematology
- Practical Hematology by Daccie
- Guideline of American Society of Hematology

- Guidelines from British Committee for standard Hematology (BSCH)

8.2 Website:

Forensic Medicine

- PFSA Guidelines :https//:pfsa.punjab.gov.pk

Prime

- https://libguides.usc.edu/writingguide/academicwriting

8.3 Articles:

- Koponen J, Pyörälä E, Isotalus P. Communication skills for medical students: Results from three experiential methods. Simulation & Gaming. 2014 Apr;45(2):235-54.

9. Timetables

AYUB MEDICAL COLLEGE, ABBOTTABAD

Department of Medical Education

Time Table **Third Year MBBS**

Class Session 2023

Block-H: (Blood & Immunology II Module)

Week 01: Theme 01 (Pallor & Fatigue)

Days	8:00-9:00 am	9:00-10:00 am	10:00-12:00	12:00-12:45 am	01:15-02:00pm	02:00-3:00 pm
Mon	RBCs **Physiology L1** Dr. Asfand	Anemia **Pathology L1** Dr. Romana	Hospital Duty	**Trace evidence** **Forensic Medicine L1** **Dr. Salma**	**A:Pathology** **B:Pharmacology** **C:Forensic Medicine** **D:Community Medicine**	
Tue	Megaloblastic Anemia **Pathology L2** Dr. Romana	Blood group systems **Forensic Medicine L2** Dr. Omair		**Hereditary Spherocytosis** **Pathology L3** Dr. Romana	**A:Pharmacology** **B: Forensic Medicine** **C:Community Medicine** **D:Pathology**	
Wed	Blood group systems (medicolegal importance) **Forensic Medicine L3** Dr. Salma	Sickle cell Anemia **Pathology L4** Dr. Romana		Sickle cell Anemia **Medicine L1** Dr. Adnan	**Thalassemia** **Pathology L5** **Dr. Romana**	**Thalassemia** **Paeds L1** **Dr. Saima Bibi**
Thurs	G6PD Deficiency **Pathology L6** Dr. Romana	Drugs for Anemia **Pharmacology L1** Dr. Saad Mufti		Drugs for Anemia **Pharmacology L2** Dr. Saad Mufti	**A:Forensic Medicine** **B:Community Medicine** **C:Pathology** **D:Pharmacology**	
Fri	**A:Community Medicine** **B:Pathology** **C:Pharmacology** **D:Forensic Medicine**		Paroxysmal Nocturnal Hemoglobinuria **Pathology L7** Dr. Romana 10:00-11:00	Immune Hemolytic Anemia **Pathology L8** Dr. Romana	HALFDAY	

AYUB MEDICAL COLLEGE, ABBOTTABAD

Department of Medical Education

Time Table **Third Year MBBS**

Class Session 2023

Block-H: (Blood & Immunology II Module)

Week 02, Theme 01 (Pallor & Fatigue) & Theme 02 (Fever)

Days	8:00-9:00 am	9:00-10:00 am	10:00-12:00	12:00-12:45 am	01:15-02:00pm	02:00-3:00 pm
Mon	Epidemiology (Blood and Blood Forming organs Diseases) **Community Medicine L1** Dr. Awais	Aplastic Anemia **Pathology L9** Dr. Romana	Hospital Duty	**Polycythemia Vera Pathology L10 Dr. Romana**	**A:Pathology B:Pathology C:Forensic Medicine D:Community Medicine**	
Tue	WBCs & Platelets **Physiology L2** Dr. Asfand	**Transfusion medicine Pathology L11 Dr. Romana**		Acute Myelogenous Leukemia **Pathology L12** Dr. Ammar	**A:Pathology B: Forensic Medicine C:Community Medicine D:Pathology**	
Wed	Forensic lab Procedures **Forensic Medicine L4** Dr. Omair	**Chronic Myelogenous Leukemia Pathology L13** Dr. Ammar		Immunity **Pathology L14** Dr. Idrees	Blood Stains **Forensic Medicine L5** Dr. Salma	Acute Lymphocytic Leukemia **Pathology L15** Dr. Ammar
Thurs	Humeral Immunity **Pathology L16** Dr. Idrees	Cell mediated Immunity **Pathology L17** Dr. Idrees		Chronic Lymphocytic Leukemia **Pathology L18** Dr. Ammar	**A:Forensic Medicine B:Community Medicine C:Pathology D:Pathology**	
Fri	**A:Community Medicine B:Pathology C:Pathology D:Forensic Medicine**		Immunization **Community Medicine L2** Dr. Adnan 10:00-11:00	Kodgkins Lymphoma **Pathology L19** Dr. Ammar	**HALFDAY**	

AYUB MEDICAL COLLEGE, ABBOTTABAD

Department of Medical Education

Time Table **Third Year MBBS**

Class Session 2023

Block-H: (Blood & Immunology II Module)

Blood & Immunology module II, Week 03: Theme 02 (Fever) & Theme 03 (Bleeding)

Days	8:00-9:00 am	9:00-10:00 am	10:00-12:00	12:00-12:45 am	01:15-02:00pm	02:00-3:00 pm
Mon	Collection & preservation of biological material **Forensic Medicine L6** Dr. Inayat	Non Hodgkins Lymphoma **Pathology L20** Dr. Idrees	**Hospital Duty**	Principles of Ethics **PRIME (Surgery) L1** Dr. Danish Naveed	---------- Antibodies **Pathology L21** Dr. Idrees	
Tue	Myeloproliferative Disorders **Medicine L2** Dr. Farhat	**Allergy & Hypersensitivity Pathology L 22 Dr. Idrees**		Immune Modulator Drugs **Pharmacology L3** Dr. Afsheen Siddiqui	Mylodysplasia **Pathology L23** Dr. Ammar	Confidentiality **PRIME (Surgery) L2** Dr. Amjad Farooq
wed	**Immune Modulator Drugs Pharmacology L4 Dr. Afsheen Siddiqui**	**Plasma cell Disorder Pathology L 24 Dr. Ammar**		**Immune Tolerance Pathology L 25 Dr. Idrees**	**Platelets Physiology L3 Dr. Asfand**	**Autoimmune Diseases Pathology L 26 Dr. Idrees**
Thur	**Immunodeficiency Diseases Pathology L 27 Dr. Idrees**	Thrombocytopenia & VWD **Pathology L28** Dr. Amina		ITP **Medicine L3** Dr. Touqeer	Academic Writing & Integrity **PRIME (Community Med) L3** Dr. Zeeshan Haroon	Hemophilia **Pathology L29** Dr. Ammar
Friday	Academic Writing & Integrity **PRIME (Community Med) L4** Dr. Zainab Nazneen	**Complement Pathology L30 Dr. Idrees**		Anti-plasmin Antifibrinolytic Antihaemophilia drugs **Pharmacology L5** Dr. Saad Mufti	Epidemiology of Blood Borne Infections **Community Medicine L3** Dr. Adnan	
Mon	DIC **Pathology L31** Dr. Amina	**Applied Immunity Pathology L32 Dr. Idrees**				

L: Sequence of lectures of a discipline.

10. For inquiry and troubleshooting

Please contact
1-Dr Sumbal Tariq
Professor & HOD Pharmacology Department.
Mobile No: 0300 5613047
Email: drsumbaltariq@yahoo.com
2- Dr Afsheen Siddiqi
Associate Professor Pharmacology
Moblie No: 03345092422
Email: drafsheenfaisal@gmail.com

11.Course Feedback Form

Course Title: _____

Semester/Module _____ Dates:_____

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

THE DESIGN OF THE MODLUE

A. Were objectives of the course clear to you? Y ☐ N ☐

B. The course contents met with your expectations ☐
   l. Strongly disagree 5. Strongly agree

C. The lecture sequence was well-planned ☐
   l. Strongly disagree 5. Strongly agree

D. The contents were illustrated with ☐
   l. Too few examples 5. Adequate examples

E. The level of the course was ☐
   l. Too low 5. Too high

F. The course contents compared with your expectations ☐
   l. Too theoretical 5. Too empirical

G. The course exposed you to new knowledge and practices ☐
   l. Strongly disagree 5. Strongly agree

H. Will you recommend this course to your colleagues? ☐
   l. Not at all 5. Very strongly

THE CONDUCT OF THE MODLUE

A. The lectures were clear and easy to understand ☐
   l. Strongly disagree 5. Strongly agree

B. The teaching aids were effectively used ☐
   l. Strongly disagree 5. Strongly agree

C. The course material handed out was adequate ☐
   l. Strongly disagree 5. Strongly agree

D. The instructors encouraged interaction and were helpful ☐
   l. Strongly disagree 5. Strongly agree

E. Were objectives of the course realized? Y ☐ N ☐ Please give overall rating of the course

90% - l00%	( )	60% - 70%	( )
80% - 90%	( )	50% - 60%	( )
70% - 80%	( )	below 50%	( )

Please comment on the strengths of the course and the way it was conducted.

Please comment on the weaknesses of the course and the way it was conducted.

Please give suggestions for the improvement of the course.

Optional – Your name and contact address:

Thank you!!