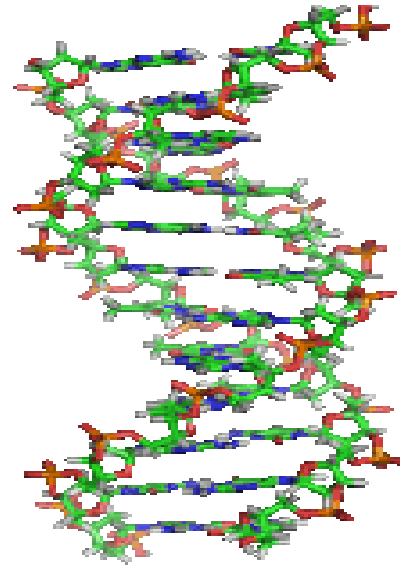
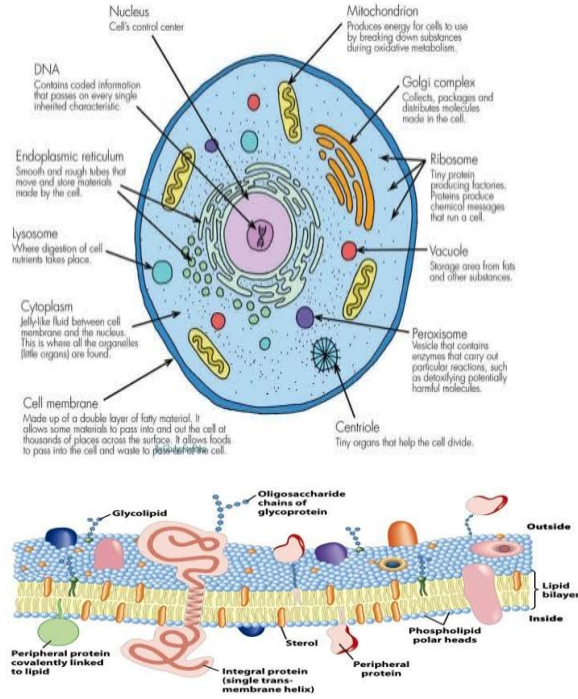


Foundation Module Study Guide

An outline to facilitate students' learning



Department of Medical Education
Gajju Khan Medical College Swabi

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Vision and Mission of GKMC

Khyber Medical University: Vision



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

Gajju Khan Medical College: Vision



Service to humanity through evidence based medicine

Gajju Khan Medical College: Mission



To produce health care leaders who will practice ethical and evidence based medicine by providing excellent education to medical students through trained faculty, in a conducive environment and through continuous evaluation

Sub-Curricular Committee of 1st year MBBS

sn	Faculty member	Portfolio	
1	Course Director of 1 st year MBBS (HoD Anatomy)	Chairman	
2	Module coordinator foundation	Member	Foundation Module Coordinator Dr. Kashif Shahid Cell No: 03339423537
3	Module coordinator blood	Member	
4	Module coordinator musculoskeletal	Member	
5	Module coordinator CVS	Member	
6	Module coordinator Respiration	Member	
7	HoD Anatomy Department	Member	
8	HoD Physiology Department	Member	
9	HoD Biochemistry Department	Member	
10	Medical educationist	Member	

Integrated curriculum:

An integrated curriculum is all about making connections, whether to real life or across the disciplines, about skills or about knowledge. An integrated curriculum fuses subject areas, experiences, and real-life knowledge together to make a more fulfilling and tangible learning environment for students. Integrated teaching means that subjects are presented as a meaningful whole. Students will be able to have better understanding of basic sciences when they repeatedly learn in relation to clinical examples. Case based discussions, computer-based assignments, early exposure to clinics, wards, and skills acquisition in skills lab are characteristics of integrated teaching program.

Outcomes of the curriculum:

The outcomes of the curriculum of MBBS According to the PMDC are as follows

- Knowledgeable
- Skilful
- Community Health Promoter
- Problem-solver
- Professional
- Researcher
- Leader and Role Model

General Learning Outcomes of the Module

By the end of this module the students should be able to;

Knowledge

1. Familiarize with the MBBS system based curriculum
2. Recognize the role of different disciplines in studying human body and its diseases.
3. Describe the structure, function and biochemical composition of cell.
4. Describe the cell division, its types and genetic material along with its clinical correlation.
5. Describe the basic organization of human body.
6. Explain the maintenance of homeostatic mechanism.
7. Describe the various stages of pre embryonic human development and correlate them with various malformations.
8. Describe the importance of buffer and PH system.
9. Describe various cellular adaptations during cell growth, differentiation and cell injury.

Skills

1. Describe the basic laboratory techniques and use of microscope.
2. Follow the basic laboratory protocols.
3. Perform biochemical analysis of carbohydrates.

Attitude

1. Follow the basic laboratory protocols.
2. Participate in class and practical work efficiently.
3. Maintain discipline of the college.
4. Follow the norms of the college properly.

5. Communicate effectively in a team with colleagues and teachers.
6. Demonstrate professionalism and ethical values in dealing with patients, cadavers, colleagues and teachers.
7. Communicate effectively in a team with colleagues and teachers.
8. Demonstrate the ability to reflect on the performance

Table of Specification

Theme 1: Orientation				
SNO	Topic	Learning Outcomes	MIT	Assessment
ANATOMY				
1	Anatomy and its sub branches	Define anatomy and its branches Describe purpose of study of anatomy and its branches	Lecture	MCQs
PHYSIOLOGY				
2	Physiology and its sub branches	Enumerate the branches of physiology	Lecture	MCQs
BIOCHEMISTRY				
3	Introduction to biochemistry and its implication in medicine	Define biochemistry Discuss the role of biochemistry in medicine.	Lecture	MCQs

PATHOLOGY				
4	Introduction to pathology and its implication in medicine	Define pathology Enumerate the different branches of pathology. Identify different sampling and processing techniques in different branches of pathology.	Lecture	MCQs
PHARMACOLOGY				
5	Introduction to pharmacology and its role in modern medicine	Define pharmacology and role of pharmacology in medicine. Define the pharmaco-dynamics and pharmacokinetics	Lecture	MCQs
COMMUNITY MEDICINE				
6	Introduction to community Medicine and its implication	Describe Role of community medicine/public health in health care system.	Lecture	MCQs
FORENSIC MEDICINE				
7	Introduction to Forensic Medicine and Toxicology	Define Forensic Medicine, forensic pathology and state Medicine. Identify the Branches of Forensic Medicine. Describe the History of Forensic Medicine. Discuss the	Lecture	MCQs

		scope of Forensic Medicine. Identify the essential facilities for medico legal investigation. Define Medical Jurisprudence (not included for assessment in foundation module first year MBBS)		
8	Pakistan Medical & Dental Council, Consent.	Describe the structure and functions of Pakistan Medical and Dental Council.	Lecture	MCQs

MEDICAL EDUCATION				
9	Curriculum structure Teaching learning strategies	Discuss the curriculum and modules. Describe the use of study guides.(not to be assessed) Differentiate between various teaching & learning strategies. Enlist various assessment tools & assessment policy. (Not to be assessed).	Lecture	
IT Skills				
10	Importance of IT skills	Define IT and its importance	Demonstration	MCQs
11	MS word skills PowerPoint	Prepare the assignment on MS word Prepare the presentation on		

	skills Excel sheet	power point Use the excel sheet		
Library				
12	Literature search and library resources	Literature search skills	Lecture	Formative

Theme 2:				
Cell				
S NO.	Topic	Learning Outcomes	MIT	Assessment
ANATOMY				
13	Cell structure and its Organelles	<ul style="list-style-type: none"> • Describe the cell as a living unit of body • Describe the structure of cell and its organelles. • Describe the structure of cytoplasmic organelles of the cell & correlate it with their functions. 	Lecture	MCQs
14	Nuclear structure & components	Describe the structure of the nucleus, nucleolus & chromosome and their functions in cell integrity.	Lecture	MCQs
15	Cell division Mitosis	Explain the process of cell division. Describe mitotic cell division with its stages.	Lecture	MCQs
16	Meiosis	<ul style="list-style-type: none"> • Explain the process of Meiosis • Describe karyotyping. 	Lecture	MCQs

		<ul style="list-style-type: none"> • Explain the non-disjunction of chromosomes. • Correlate the process of non-disjunction with chromosomal abnormalities 		
PHYSIOLOGY				
17	Cell membrane physiology	<ul style="list-style-type: none"> • Explain Intra cellular and extra cellular environment. • Correlate cytoplasmic organelles with their functions. 	Lecture	MCQs
18	Homeostasis	<ul style="list-style-type: none"> • Define homeostasis. • Describe the Homeostatic mechanism of major functional systems. • Describe the characteristics of control systems with examples 	Lecture	MCQs
19	Membrane potential	<ul style="list-style-type: none"> • Define membrane potential • Describe ionic conc. differences across cell membrane • Explain the Nernst equation. • Explain origin of normal resting membrane potential 	Lecture	MCQs

20	Movements of cell	<ul style="list-style-type: none"> • Explain the amoeboid movement of cells. • Describe the ciliary movements 	Lecture	MCQs
21	Depolarization & Repolarization	<ul style="list-style-type: none"> • Explain the role of voltage gated Na⁺ and K⁺ channels in action potentials. • Discuss the changes in conductance of Na and K channels with changes in membrane potentials 	Lecture	MCQs
BIOCHEMISTRY				
22	Biochemical structure of cell	Explain the Bio-chemical composition of cell organelles and cytoplasm	Lecture	MCQs

	Bio chemical structure of Mitochondria	<ul style="list-style-type: none"> • Describe the chemical structure of mitochondrial membrane. Explain the biochemical importance of mitochondrial membrane. 		
23	Nuclear membrane	<ul style="list-style-type: none"> • Describe Bio-chemical structure of nuclear membrane and its functions. 	Lecture	MCQs
24	RNA & DNA	<ul style="list-style-type: none"> • Define and explain nucleotides and nucleosides. • Describe the components of nucleotides • Describe the functions of Nucleotides • Describe the types of nucleic acids 	Lecture	MCQs

		<ul style="list-style-type: none"> • Differentiate between RNA and DNA.. 		
26	Buffer	<ul style="list-style-type: none"> • Define Buffer and its role in maintenance of body PH • Define colloidal state and Henderson Hasselbalch equation. • Define adsorption and how it occurs. • Explain ion exchange resin 	Lecture	MCQs
27	Cellular membrane transport mechanism	<ul style="list-style-type: none"> • Explain membrane transport. • Discuss passive diffusion, active transport, and facilitated transport viaa channel or carrier. • Describe and evaluate the role of ion gradients, co transporters, and ATP in active transport mechanisms. 	Lecture	MCQs
PATHOLOGY				
28	Cell injury	<ul style="list-style-type: none"> • Describe the various causes of cell injury. • Describe the response of a normal cell to stimuli. • Describe the mechanisms of cell injury. • Describe the different types of cellular adaptations. 	Lecture	MCQs

PHARMACOLOGY				
29	Routes of administration of drugs	<ul style="list-style-type: none"> Enlist the route of administration of a drug. 	Lecture	MCQs
30	TRANSMEMBRANE DRUG TRANSPORT	<ul style="list-style-type: none"> Explain how drugs are transported across cell membrane and factors affecting it 	Lecture	MCQs
31	Receptor and cellular basis	Enlist the types of drug receptors	Lecture	MCQs
LAB WORK				
32	The Microscope	<ul style="list-style-type: none"> Identify parts of microscope. Demonstrate operation of microscope. Describe the method of focusing slide at different magnifications. Follow the specified norms of lab work. 	Demonstration /Practical	OSPE
33	Lab Equipments	<p>Introduction to lab techniques</p> <p>Identify the equipments used in lab work</p>	Demonstration /Practical	OSPE

34	PH and buffer solutions	<p>Define normal solution Define standard solution.</p> <p>Prepare 0.1N solution of NaOH. Prepare 0.1N solution of HCL.</p> <p>Measure the PH of given solution (practical).</p>	Demonstration /Practical	OSPE
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Theme 3: Growth and development				
SN	topic	learning outcomes	MIT	Assessment
	Learning Outcome			
35	introduction to embryology	<p>Describe the developmental stages.</p> <ul style="list-style-type: none"> • Describe the embryologic terminology. • Explain significance of embryology 	Lecture	MCQ
36	spermatogenesis	Describe the process of spermatogenesis.	lecture	MCQ

		<ul style="list-style-type: none"> • Differentiate between spermiogenesis and spermatogenesis. • Describe the morphological changes during maturation of gametes 		
37	oogenesis	<p>Describe oogenesis and its correlation with meiosis.</p> <ul style="list-style-type: none"> • Compare the male and female gametes 	lecture	MCQ
38	transport of gametes	<p>Transport Of Gametes</p> <ul style="list-style-type: none"> • Explain the transport of gametes. • Describe the transport of sperms. • Describe the oocyte transport. • Explain the maturation of sperms 	lecture	MCQ
39	female reproductive cycle	<p>Describe the ovarian cycle.</p> <ul style="list-style-type: none"> • Discuss the process of follicular development • Explain the process of ovulation. • Correlate ovulation with the phases of menstrual cycle. 	lecture	MCQ
40	fertilization- events	<p>Define fertilization.</p> <ul style="list-style-type: none"> • Describe the process of fertilization. • Explain assisted reproductive technologies like In-vitro fertilization (IVF), assisted IVF and intra cytoplasmic sperm injection (ICSI). 	lecture	MCQ

41	Fertilization –Clinical Correlates Cleavage & Blastocyst Formation	Discuss the clinical correlation of the fertilization. <ul style="list-style-type: none"> • Describe the process of cleavage of zygote. • Discuss the formation of blastocyst. • Summarize the events of first week of development 	lecture	MCQ
42	Implantation & Its Abnormalities	Describe the process of implantation. <ul style="list-style-type: none"> • Enumerate the sites of implantation. • Explain the clinical correlations of the implantation process 	lecture	MCQ
43	amniotic activity	Describe the formation of amniotic cavity <ul style="list-style-type: none"> • Describe the development of embryonic disc Describe the development of umbilical vesicle. <ul style="list-style-type: none"> • Explain the development of Chorionic sac. 	lecture	MCQ
44	events of 2 nd week of Development	Summarize the events of second week of development. <ul style="list-style-type: none"> • Explain the clinical correlates of the second week of development. 	lecture	MCQ
45	formation of Notocord	Explain the process of formation of Notocord	lecture	MCQ
46	Events of 3rd Week Of Development	Describe the process of gastrulation. <ul style="list-style-type: none"> • Explain the process of Neurulation. 	lecture	MCQ

		<ul style="list-style-type: none"> • Explain the development of somites. Lecture MCQs <ul style="list-style-type: none"> • Describe the development of intra-embryonic coelom. 		
47	Derivatives of germ layers	Describe briefly derivatives of germ layers <ul style="list-style-type: none"> • Ectoderm • Mesoderm • Endoderm 	lecture	MCQ
48	Further development of Trophoblast and Neuralation	Describe the process of development of Trophoblast and neurulation	lecture	MCQ
49	fetal membranes	Describe the formation of fetal membranes	lecture	MCQ
50	4 th week: Folding of embryo	Describe the process and types of folding of embryo	Lecture	MCQs
51	Highlights of 4-8 weeks	Enlist the events occurring in 4-8 weeks of development	Lecture	MCQs
BIOCHEMISTRY				
52		<ul style="list-style-type: none"> • Define acids, bases • Describe strong acids and weak acids. • Describe strong bases and weak bases. • List different types and sources of acids and bases in our body 	lecture	MCQs

	Chemistry of Acids and Bases	<ul style="list-style-type: none"> Describe the mechanism of their normal balance and biochemical importance 		
53	Importance of surface tension and viscosity in our body	<ul style="list-style-type: none"> Explain surface tension, viscosity, vapor pressure, normal boiling point and capillary action 	lecture	MCQs
54	Carbohydrates -I	<ul style="list-style-type: none"> Describe carbohydrates and give their Bio-chemical importance. Classify Carbohydrates Explain carbohydrate and its Bio-chemical structure. Describe the different isomers of monosaccharides. e.g. Galactose, mannose, fructose, dextrose. Describe the role of dextrose in I/V infusion. Describe the role of mannitol in cerebral edema. 	lecture	MCQ
55	Carbohydrates -II	<ul style="list-style-type: none"> Describe the structure of disaccharides and oligosaccharides. 	lecture	MCQ
56	Carbohydrates -III	<ul style="list-style-type: none"> Relate the structure of polysaccharides with its clinical importance. 	lecture	MCQ

		<ul style="list-style-type: none"> List the functions of carbohydrates in cell membrane, energy provision and nutrition supply to different parts of body. 		
Community medicine				
57		<ul style="list-style-type: none"> Define health Describe the Determinants of Health 	lecture	MCQ
58	Disease causation	<p>Describe Spectrum of Disease</p> <ul style="list-style-type: none"> Explain Natural History of Disease Explain Theories of Disease Causation. Differentiate between Disease Elimination and Eradication. 	lecture	MCQ
59	Chain of infection	<ul style="list-style-type: none"> Describe reservoirs of infection & chain of infection 	lecture	MCQ
60	levels of prevention	<ul style="list-style-type: none"> Discuss /describe Levels of Prevention 		
lab work				
61	Sterilization	<p>Explain the process of sterilization</p> <ul style="list-style-type: none"> Enumerate the different methods of sterilization <ul style="list-style-type: none"> Observe the process of autoclaving in the laboratory 	demonstration/practical	OSPE
62	Capillary Blood Sampling	Obtain capillary blood sample for hematological investigations through prick method	demonstration/practical	OSPE

		<ul style="list-style-type: none"> Identify the sites for obtaining blood sample with different methods and list the indications for their use. 		
63	Detection of Monosaccharide's	Define Monosaccharide's <ul style="list-style-type: none"> Discuss structure and types <ul style="list-style-type: none"> Perform the sequence of tests to identify the monosaccharides in a given solution. 	demonstration/practical	OSPE
64	Detecting of Reducing and nonreducing Sugars	Define reducing sugars, types. <ul style="list-style-type: none"> Discuss structure and types of reducing sugars <ul style="list-style-type: none"> Perform Benedicts test 	demonstration/practical	OSPE
65	Detection of Polysaccharides in a given Solution	Define Polysaccharides. <ul style="list-style-type: none"> Discuss structures and types of Polysaccharides <ul style="list-style-type: none"> Perform the sequence of tests to identify the polysaccharides in a given solution. 	demonstration/practical	OSPE

Theme 4: Body tissues				
sn	topic	Learning outcomes	M IT	Assessment
Anatomy				

66	Organization of human body	<ul style="list-style-type: none"> Describe the levels of organization of human body 	Lecture	MCQs/OSPE
67	Anatomical terms	<ul style="list-style-type: none"> Describe the anatomical terms for planes, position and movements 	Lecture	MCQs/OSPE
68	Classification of Bones	<p>Describe the structure and function of bone</p> <p>Classify bones on the basis of length and shape.</p> <p>Identify the markings on bone</p>	Lecture	MCQs/OSPE
69	Cartilage	<p>Describe cartilage</p> <p>Classify the types of cartilage</p> <p>Describe the types of cartilages</p>	Lecture	MCQs/OSPE
70	Introduction to Joints	<p>Classify joints on the basis of structure.</p> <p>Describe the mechanism of movements of joint</p>	Classify joints on the basis of structure.	Lecture
71	Muscles	Describe various muscle types along with structure.	Lecture	MCQs/OSPE
72	Skin / Integumentary system (dermis & epidermis) Skin	Discuss the anatomical structures of Skin / Integumentary system	Lecture	MCQs/OSPE

	creases, Nails, Hairs, Glands (Sebaceous & sweat)			
73	Lymphatic system	Describe the lymphatic system.		Lecture
74	Nervous system Divisions (central & peripheral and somatic & autonomic)	Define the organization of nervous system Describe the divisions of nervous system	Lecture	MCQs/OSPE
75		Describe the formation of spinal nerve and concept of dermatome and myotome Describe the formation of nerve plexus.	lecture	MCQ/OSPE
76	Autonomic Nervous system Sympathetic. parasympathetic nervous system	Describe the organization of autonomic nervous system Differentiate between sympathetic and parasympathetic nervous system on the basis of structure.	Lecture	MCQs/OSPE
77	Membranes Mucous membranes Serous membranes	Describe the structure of membranes of human body Describe commonly used radiographs. Describe various view used for obtaining radiographs.	Lecture	MCQ
Histology				

78	Basic Body tissue Definition of tissue Epithelial tissue Connective tissue Muscular tissue Nervous tissue	<ul style="list-style-type: none"> ☐ Define tissue ☐ Describe the basic tissues in human body 	lecture	MCQ
79	Epithelial tissues Classification of epithelium General characteristics an Functions of epithelium	<ul style="list-style-type: none"> Classify epithelium describe the general features of epithelium explain the specialized functions of different types of epithelial cells Describe the structure of main types of cell junctions 	lecture	MCQ/ OSPE
80	glandular e pithelium	<ul style="list-style-type: none"> Enlist glandular epithelia Classify them on the basis of morphology, nature of secretion and mode of secretion Differentiate between exocrine & endocrine glands on the basis of structure and function 	lecture	,MCQ/ OSPE
81	Epithelial Cell Surface Specialization	<ul style="list-style-type: none"> • Describe the surface specialization of epithelia • Correlate their structure, with their location and function 	lecture	,MCQ/ OSPE

82	Structure & Function Of Basement Membrane Connective tissue	<ul style="list-style-type: none"> • Correlate their structure, with their location and function Describe the structure of basement membrane & correlate it with its function. Define connective tissue. Classify connective tissues. Explain the different types of Connective tissues	lecture	,MCQ/ OSPE
Physiology				
83	Autonomic Nervous system	Describe the functions of the autonomic nervous system. Compare and contrast the functions of sympathetic and para sympathetic nervous system. Classify autonomic receptors.		
Biochemistry				
84	Structure and Function of GAGS	Describe the structure and function of GAGS and its clinical importance	lecture	MCQ
Pathology				

85	Necrosis	<ul style="list-style-type: none"> • Discuss the Process of necrosis • Explain the process of apoptosis • Differentiate between apoptosis and necrosis 	lecture	MCQ
86	Inflammation	<ul style="list-style-type: none"> • Describe acute inflammation • Describe events of acute inflammation • Describe chronic inflammation <ul style="list-style-type: none"> • Differentiate between acute and chronic inflammation 	Lecture	MCQ
Forensic Medicine				
87		<ul style="list-style-type: none"> • Define death. • Describe stages of death. <ul style="list-style-type: none"> • Describe medico legal importance of stages of death. 	lecture	MCQ
Lab Work				
88	Tissue Processing	Describe the process of tissue processing for histo-pathological examination.	Demonstration /Practical	OSPE

89	Anatomical terms	<ul style="list-style-type: none"> Demonstrate anatomical terms for planes, position and movements. Demonstrate standard anatomical position and its application. 	Demonstration /Practical	OSPE
90	H& E staining	Perform H & E staining of tissue slides under supervision in the laboratory	Demonstration /Practical	OSPE
91	Simple Epithelia	Identify and describe simple epithelia under M/S.	Demonstration	OSPE
92			/Practical	
93	Stratified Epithelia	Identify and describe stratified epithelia under M/S.	Demonstration/ practical	OSPE
	Glands	Identify different types of glands under M/S.	Demonstration /Practical	OSPE
	Smear preparation	Prepare a blood smear	Demonstration /Practical	OSPE

Teaching and learning strategies:

The following teaching / learning methods are used to promote better understanding:

- Interactive Lectures
- Hospital / Clinic visits
- Demonstration in laboratory
- Self-Directed Study

Interactive lectures:

An interactive lecture is an easy way for instructors to intellectually engage and involve students as active participants in a lecture-based class of any size. Interactive lectures are classes in which the instructor breaks the lecture at least once per class to have students participate in an activity that lets them work directly with the material.

- The instructor might begin the interactive segment with an engagement trigger that captures and maintains student attention.
- Then the instructor incorporates an activity that allows students to apply what they have learned or give them a context for upcoming lecture material.
- As the instructor feels more comfortable using interactive techniques he or she might begin to call upon a blend of various interactive techniques all in one class

period.

Hospital / Clinic visits:

In small groups, students observe patients with signs and symptoms in hospital or clinical settings. This helps students to relate knowledge of basic and clinical sciences of the relevant module.

Skills/Practical session:

Skills relevant to respective module are observed and practiced where applicable in skills laboratory or Laboratories of various departments.

Self-Directed learning (SDL):

Self-directed learning, which involves studying without direct supervision in a classroom/Library, is a valuable way to learn and is quickly growing in popularity among parents and students. Students' assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Centre, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self-study.

Time tables:

The time tables for the module are as under.

TIME TABLE FOR FOUNDATION MODULE GAJJU KHAN MEDICAL COLLEGE SWABI SESSION 2019-2020

WEEK 1

Day/Date	08:00 – 09:00 am	09:00 – 11:00 am	11:00 am – 12:00 pm	12:00 – 01:00 pm	01:00 -1:30 pm	01:30 – 03:30 pm	
Monday 13/01/2020	Reception & Registration of students	White Coat Ceremony; Welcome address by the Dean	Orientation to Anatomy Department & Faculty	Orientation to Physiology Department & Faculty	PRAYER BREAK	Orientation to Biochemistry Department & Faculty	
Day/Date	08:00 – 10:00 am	10:00 – 11:00 am	11:00 am – 12:00 pm	12:00 – 01:00 pm		01:30 – 03:30 pm	
THEME 2: CELL							
Tuesday 14/01/2020	PRACTICALS Batch A: Histo Batch B: Phy Batch C: Bio	Histo-L1 Introduction to Histology and General Anatomy	Phy-L1 Internal Environment/ Homeostasis	Phy-L2 Physiologic Structures of organelles			SGDs ANATOMY
Wednesday 15/01/2020	PRACTICALS Batch A: Bio Batch B: Histo Batch C: Physio	Emb-L1 Introduction to Embryology, Meiosis	Bio-L1 Cell and Subcellular Organelles	Phy-L3 Cell organelles & Locomotion			SGDs PHYSIOLOGY
Thursday 16/01/2020	PRACTICALS Batch A: Physio Batch B: Bio Batch C: Histo	Emb-L2 Spermatogenesis	Phy-L4 Passive transport Across Membrane	Phy-L5 Active Transport Across Membrane		SGDs BIOCHEMISTRY	
Friday 17/01/2020	08:00 – 09:00 am	09:00 -10:00 am	10:00 – 11:00 am	11:00 am – 12:30 pm	12:30-02:00 pm	02:00-03:30 pm	
	Islamiyat Introduction /Pak Studies ntrouction	Bio-L2 Acids and bases, Buffers	PRIME-1 Introduction to PRIME: An overview of Medical Education	Histo-L2 Cytoskeleton	JUMMA PRAYER	SDL (SLRC/Library)	

Chairman 1st yr Curricular Committee Dr Usman (HoD Anatomy)

Module Coordinator: Dr.Kashif Shahid

Cell No: 03339423537

Assessment tools:

Theoretical knowledge is tested by a written examination system constituted by multiple choice questions (MCQs). The assessment of practical knowledge involves oral, spot, or objective structured practical examinations (OSPE).

Multiple Choice Questions (MCQs):

- ❑ Multiple choice questions (MCQs) are a form of assessment for which students are asked to select the best choice from a list of answers.
- ❑ MCQ consists of a stem and a set of options. The stem is usually the first part of the assessment that presents the question as a problem to be solved; the question can be an incomplete statement which requires to be completed and can include a graph, a picture or any other relevant information. The options are the possible answers that the student can choose from, with the correct answer called the key and the incorrect answers called distractors.
- ❑ Correct answer carries one mark, and incorrect 'zero mark'. There is NO negative marking.
- ❑ Students mark their responses on specified computer-based sheet designed for the college.

Assessment plan for Foundation module

*this table shows the distribution of MCQs according to the time spent in teaching

Subject	Hours allocated in TT (Cognitive)	Percent distribution (Hours allocated in TT/total hours*100)	Percentage distribution of hours (subject-wise)	No. of MCQs	Total subject-wise MCQs
Core Subjects: Total 100 MCQs					
Gross Anatomy	21	29%	57%	29	57
Histology	5	7%		7	
Embryology	15	21%		21	
Physiology	6	10%	10%	10	10
Biochemistry	24	33%	33%	33	33
Total	71	100%	100%	100	100
Additional Subjects: Total 20 MCQs					
Surgery	1	3	3	1	1
Radiology	1	4	4	1	1
Pathology	3	11	11	2	2
Pharmacology	2	7	7	2	2
Forensic medicine	1	4	4	1	1

Community medicine	4	14	14	2	2
General Medicine	1	4	4	1	1
PRIME	15	53	5	10	10
Total	28	100	100	20	20

Block A exam will comprise of (foundation and blood modules) 120 MCQs and will be compiled according to the shared blueprint as shown below.

• **Paper-A (Foundation and Blood module)**

•

Subject	No. of MCQs in Foundation (total 158 hours)	No. of MCQs in Blood (total 93 hours)	Total *
Gross Anatomy	12	1	13
Histology	10	4	14
Embryology	15	0	15
Physiology	10	22	32
Biochemistry	14	12	26
Pathology	2	4	6
Pharmacology	1	1	2
Community medicine	1	2	3
Forensic medicine	0	1	1
PRIME	5	3	8
Total	70	50	120

• * Distribution of MCQs are based on a ratio of 1.7:1 (158:93) between 2 modules

?

Objective Structured Practical Examination (OSPE):

- ❑ The content may assess application of knowledge, or practical skills.
- ❑ Student will complete task in define time at one given station.
- ❑ All the students are assessed on the same content by the same examiner in the same allocated time.
- ❑ A structured examination will have observed, unobserved, interactive and rest stations.
- ❑ Observed and interactive stations will be assessed by internal or external examiners.
- ❑ Unobserved will be static stations in which students will have to answer the questions related to the given pictures, models or specimens the provided response sheet.
- ❑ Rest station is a station where there is no task given, and in this time student can organize his/her thoughts.
- ❑ The Block OSPE will be comprised of 18 examined station and 7 rest stations. The stations will be assigned according to the shred blueprint as given below.

Blueprint for OSPE Block A

(Foundation plus blood module)

	<i>Practicals</i>	<i>Percentage</i>	<i>Number of O in block exam</i>
<i>Foundation Module</i>	16	59%	11
<i>Blood Module</i>	11	41%	7
<i>Total</i>	27	100%	18

<i>Specialty</i>	<i>Practical's</i>	<i>weightage</i>	<i># stations</i>
<i>Foundation Anatomy</i>	Operating The Microscope Operating The Microscope Anatomical terms H& E staining Histology of Simple Epithelia Histology of Stratified Epithelia Histology of Glands	26%	5
<i>Foundation Biochemistry</i>	PH and buffer solutions Detection of Polysaccharides in a given Solution Detection of Monosaccharide's Detecting of Reducing and non-reducing Sugars	15%	3
<i>Foundation Physiology</i>	Lab Equipment's Oral temperature Capillary Blood Sampling	11%	2
<i>Foundation Pathology</i>	Sterilization Tissue Preparation	7%	1
<i>Blood Anatomy</i>	Blood histology Histology of Lymph nodes	7%	1
<i>Blood Biochemistry</i>	Estimation of plasma proteins in serum Preparation of protein free filtrate	7%	1

<i>Blood Physiology</i>	Hb determination	26%	5
	Blood count		
	TLC determination		
	DLC determination		
	Bleeding time & Clotting time determination		
	Prothrombin time determination		
	Blood grouping		
Total		100%	18

Examination Regulations

Following additions are proposed in the existing KMU Examinations Regulations 2017, for the implementation of Modular System:

1. The student has to pass all the blocks (including both paper and OSPE/OSCE) of the previous examination.
2. A student who fails in part of the exam and does not avail two consecutive chances will have to clear all the subjects/modules in the subsequent chances. The minimum passing marks in each subject / module shall be 50% each in theory and practical. A student who fails in theory or in practical examination of a subject/module shall be considered to have failed in the subject/module and will have to reappear both in theory and practical.
3. Any student who fails both in annual and supplementary examinations in any subject/module of any Professional examination shall not be promoted to the next higher class. S/he shall undergo the course of studies in the subject(s)/module in which s/he failed. There will be no provisional promotion in such cases.
4. A student who fails in any subject/module shall be required to attend the lectures and practical courses regularly with the subsequent class.
5. Preparatory holidays shall be minimum four weeks for 1st to 4th Professional MBBS / BDS examinations and minimum four to six weeks in Final Professional MBBS / BDS examination.
6. There shall be a system-based annual examinations for program(s) based on Modular System and Supplementary examination shall be allowed after each annual examination within 30 days of declaration of results for program(s) based on Modular System .In exceptional situation i.e., national calamities, war or loss of solved answer books in case of accident, special examination may be arranged after having observed due process of law. This will require permission of relevant authorities, i.e. Academic Council, Syndicate and Senate.

7. The candidates shall be required to submit Admission Forms duly attested by the Principal of respective College on or before the date notified for the purpose along with prescribed fee. The Principal must certify that the candidates concerned have actually attended 75% of the lectures delivered and practical/clinical sessions conducted during the academic year in each subject/module.

(a) There shall be internal assessment in all the subjects/modules/blocks as per prescribed format.

(b) The internal assessment of modules/blocks/subjects shall be submitted to the Controller of Examination of the KMU by the department of Medical Education of institute.

(c) Continuous internal assessment shall consist of evaluation at the end of each assignments, e.g. stages / sub-stages, class tests etc., module/block, attitudinal assessment from educational and/or clinical supervisors, clinical skill assessment from clinical supervisors, and Year's work books.

(d) Assessment of Knowledge, Skills and Attitude shall contribute towards internal assessment. Methods used to assess these domains shall include Multiple Choice Questions, Short Essay Questions, Oral / Viva and Practical / Clinical examinations.

(e) Awards of internal assessment in all the subjects of all the candidates shall be submitted to the Controller of Examinations along with Admission Forms for the annual examination. Internal assessment received after commencement of the final examination shall not be accepted.

(f) The marks of internal assessment shall be submitted only once a year prior to annual examination and the same shall be counted both for annual and supplementary examinations. It is further emphasized that fresh assessment or a revision of assessment for supplementary examination shall not be permissible.

(g) Proper record of continuous internal assessment shall be maintained by department of medical education and respective departments of the Medical Colleges / Institutes and shall be forwarded to the Controller of Examinations whenever required.

Internal Evaluation:

Internal evaluation is a process of quality review undertaken within an institution for its own ends. 10% marks of internal evaluation will be added to final marks. This 10% will be based on

Distribution of 14 Marks for paper	
Marks obtained	Average of Percentage in Block exam and Pre Professional exam

Distribution of 10 Marks for Block A OSPE/OSCE	
Marks obtained	Average of percentage in Block OSPE Exam and Block Pre Prof OSPE
	Practical copies

Table 1: Year 1 Professional Exam in System-based Curriculum

Theory paper	Modules	Theory Marks	Internal Assessment Theory (10%)	OSPE/ OSCE	Internal Assessment OSPE/ OSCE (10%)	TOTAL MARKS
Paper A	FM	120		90	10	220
	Blood					
Paper B	MSK	120		90	10	220
Paper C	CVS	120		90	10	220
	Respiratory					
TOTAL MARKS		360	40	270	30	700

Attendance Requirement:

More than 75% attendance is mandatory to sit for the modular examinations.

Learning resources:

The learning resources are as

follows Anatomy

- Clinical Anatomy by Regions by Richard S. Snell
- Gray's Anatomy for Students
- Langman`s Medical Embryology-14thEdition
- The Developing Human “by Keith L Moore”-10thEdition
- Textbook of Histology by Juncqueira
- Atlas of human Histology by Wheaters. 11thEdition
- <http://www.anatomyzone.com/>, <https://www.youtube.com/user/TheAnatomyZone>

Physiology

- Guyton and Hall Textbook of Medical Physiology
- Ganong's Review of Medical Physiology



- Human Physiology : Lauralee Sherwood

Biochemistry

- Textbook of medical biochemistry by Chatterjee-8thEdition
- Harpers Illustrated Biochemistry
- Lippincott's Illustrated Reviews: Biochemistry

