

STUDENTS GUIDE BOOK

**SECOND PROFESSIONAL MBBS
(SEMESTER – III & IV) BATCH 2017-18
(ACADEMIC SESSION 2018-19)**



INDUS MEDICAL COLLEGE

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MESSAGE

It is a great pleasure and honor for me to write this message for the 1st and 2nd Semester students of Indus Medical College, Tando Muhammad Khan. To run an institution of this magnitude is itself a tribute to the founding members, Professionals, Investors and citizens of Tando Muhammad Khan. The credit goes to the vision of Prof. Dr. Jan



Mohammed A. Memon, Chief Executive Officer of Indus Medical College who is a visionary Medical Educationist. This institution has opened the doors of Quality Medical Education for the bright youngsters of the area to become doctors and serve the community but has become a hub of patient care of the poor, disadvantaged and rural community of the area in a short span of time.

Indus Medical College faculty stands committed with the vision statement of the institution:

“To prepare competent graduate doctors in the field of medicine who are able to serve the population locally & globally using evidence based practices with utmost professionalism”

Remember dear students today's medical education is imparted as an active learning process where teacher is guide by side who ignites a flame of light in the learners to not only seek the knowledge, learn the skills but become a life long learner demonstrating a humane and professional behavior to the teachers, colleagues and ailing community.

I wish the upcoming doctors a warm welcome and assure them the endeavors of faculty to impart them quality medical education to become a seven star doctor to serve the community.

Prof. Dr. Muhammad Akbar Nizamani

MBBS, DCH, FCPS

Principal, Indus Medical College
Chairman, Department of Paediatrics and
Director Medical Education, Indus Medical College
Tando Muhammad Khan

ACADEMIC CALENDER

BATCH (2017-18)

SECOND PROFESSIONAL MBBS

THIRD SEMESTER

Classes will start from	10 th December 2018
Classes will End on	30 th March 2019
Preparation leaves	1 st to 14 th April 2019
Theory + OSPE Examination	15 th April to 11 th May 2019
Summer Vacation + Eid-ul-Fiter	12 th May to 16 th June 2019

FOURTH SEMESTER

Classes will start from	17 th June 2019
Classes will End on	05 th October 2019
Preparation leaves	6 th to 20 th October 2019
Theory + OSPE Examination	21 st Oct to 23 rd Nov 2019
Semester Break	24 th Nov to 8 th Dec 2019

THE FIFTH SEMESTER CLASSES WILL START FROM: 9TH DECEMBER 2019

WEEKLY TIME TABLE

SECOND PROFESSIONAL MBBS – 3rd & 4th SEMESTER

BATCH 2017-2018

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
08:30 am To 09:30 am	ANATOMY (PBL) Prof. Abdul Ghaffar Ansari Dr. ShaziaShahani Dr. Farooq, Dr. Mehfooz,	PHYSIOLOGY LECTURE Dr. Kavita Bai / Prof. Mumtaz Ali Memon	BIOCHEMISTRY LECTURE Dr. Dost Muhammad	ANATOMY DISCUSSION Dr. Farooq (A), Dr. Mehfooz (B), Dr. Hassan (C)	PHYSIOLOGY LECTURE Prof. Mumtaz Ali Memon / Prof. GhulamMurtaza Kaka	
09:30 am To 10:30 am	PHYSIOLOGY LECTURE Prof. GhulamMurtaza Kaka / Prof. Mumtaz Ali Memon	BIOCHEMISTRY LECTURE Dr. Dost Muhammad	PHYSIOLOGY LECTURE Dr. Kavita Bai		COMMUNITY MEDICINE Dr. Khalil Kazi	
10:30 am To 11:30 am	ANATOMY LECTURE Dr. Shazia Shahani	PRACTICALS Histology: Group A Dr. Shahida / Dr. Hassan / Dr. Roheena Physiology: Group B Dr. GhulamSarwar Biochemistry: Group C Dr. Adil / Dr. Bilques	PRACTICALS Biochemistry: Group A Dr. Adil / Dr. Bilques Histology: Group B Dr. Roheena Noman Physiology: Group C Dr. Salma Mumtaz	PRACTICALS Physiology: Group A Dr. Ghulam Sarwar Histology: Group C Dr. RoheenaNoman	PHYSIOLOGY LECTURE Dr. Kavita Bai / Prof. Mumtaz Ali Memon	
11:30 am To 12:30 pm		ANATOMY LECTURE Dr. Shazia Shahani	ANATOMY LECTURE Dr. Shazia Shahani	ANATOMY LECTURE Prof. Abdul Ghaffar Ansari	BIOCHEMISTRY LECTURE Prof. Shah Mohd. Mahesar	ANATOMY HISTOLOGY Dr. Roheena Noman
12:30 To 01:00 - PRAYER/LUNCH BREAK						
01:00 pm To 02:00 pm	ANATOMY LECTURE Prof. Abdul Ghaffar Ansari	ANATOMY DISCUSSION Dr. Farooq (B), Dr. Mehfooz (C), Dr. Hassan (A)	ANATOMY DISCUSSION Dr. Farooq (C), Dr. Mehfooz (A), Dr. Hassan (B)	PHYSIOLOGY DISCUSSION Dr. Mumtaz Ali Memon / Dr. KavitaBai	BEHAVIORAL SCIENCES Prof. Jamil Hussain	
02:00 pm To 03:00 pm	BIOCHEMISTRY LECTURE Dr. Syed Ali Akbar Shah			BIOCHEMISTRY LECTURE Dr. Syed Ali Akbar Shah	ENGLISH Dr. Nayab Mehboob	I.T Eng. Danish Hafeez Memon
<u>VENUE: LECTURE HALL LECTURE NO. 02</u>						

TEACHING HOURS PER SEMESTER

ANATOMY

Lectures (Embryology)	$2 \times 1 \text{ hours/week} \times 16 \text{ weeks} = 32 \text{ Hours}$
Demonstrations (Gross Anatomy)	$5 \times 2 \text{ hours/week} \times 16 \text{ weeks} = 160 \text{ Hours}$
Practical's (Histology)	$1 \times 2 \text{ hours/week} \times 16 \text{ weeks} = 32 \text{ Hours}$
PBL	$1 \times 2 \text{ hours/week} \times 04 \text{ weeks} = 08 \text{ Hours}$

TOTAL=

232 Hours

PHYSIOLOGY

Lectures	$3 \times 1 \text{ hours/week} \times 16 \text{ weeks} = 48 \text{ Hours}$
Practical's	$1 \times 2 \text{ hours/week} \times 16 \text{ weeks} = 32 \text{ Hours}$
PBL	$1 \times 2 \text{ hours/week} \times 04 \text{ weeks} = 08 \text{ Hours}$

TOTAL=

88 Hours

BIOCHEMISTRY

Lectures	$3 \times 1 \text{ hours/week} \times 16 \text{ weeks} = 48 \text{ Hours}$
Practical's	$1 \times 2 \text{ hours/week} \times 16 \text{ weeks} = 32 \text{ Hours}$
PBL	$1 \times 2 \text{ hours/week} \times 04 \text{ weeks} = 08 \text{ Hours}$

TOTAL=

88 Hours

COMMUNITY MEDICINE

Lectures $1 \times 1 \text{ hours / week} \times 5 \text{ weeks} = 05 \text{ hours}$

BIOMEDICAL ETHICS/BEHAVIORAL SCIENCES/RESEARCH

Lectures $1 \times 1 \text{ hours/week} \times 2 \text{ weeks} = 02 \text{ hours}$

Research Lecture $1 \times 1 \text{ hours/week} \times 1 \text{ week} = 01 \text{ hours}$

Applied Lectures $1 \times 1 \text{ hours/week} \times 8 \text{ weeks} = 08 \text{ hours}$

INFORMATION TECHNOLOGY

Lectures $1 \times 1 \text{ hours/week} \times 16 \text{ weeks} = 16 \text{ hours}$

Practical's $1 \times 1 \text{ hours/week} \times 16 \text{ weeks} = 16 \text{ hours}$

SKILL LAB

Practical's $1 \times 2 \text{ hours/week} \times 4 \text{ weeks} = 08 \text{ hours}$

TOTAL=	56 hours
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Self-Directed Learning/Assignments 15 hours/ Subject/ Per Semester = 45 Hours

DEPARTMENT OF ANATOMY

S. NO.	TEACHING FACULTY	DESIGNATION
1.	Prof. Dr. Abdul Ghaffar Ansari	Professor
2.	Prof. Dr. Abdul Latif Jokhio	Professor
3.	Dr. Shazia Begum Shahani	Associate Professor
4.	Dr. Hina Mawani	Associate Professor
5.	Dr. Syed Mehfooz Ali Shah	Lecturer
6.	Dr. Hassan Mujtaba	Lecturer
7.	Dr. Roheena Noman	Lecturer
8.	Dr. Saima Shaikh	Lecturer
9.	Dr. Sanam Habib	Lecturer
10.	Dr. Shahida Hingoro	Lecturer

MBBS COURSE CONTENTS OF ANATOMY

THIRD SEMESTER

Gross Anatomy: Abdomen + Pelvis Perineum

Prof. Dr. Abdul Ghaffar Ansari & Dr. Shazia Begum Shahani, (Lectures)

Dr. Syed Mehfooz Ali Shah & Dr. Hassan Mujtaba (Small Group Teaching)

GROSS ANATOMY	
1.	Topographic Anatomy
2.	Structure Of The Anterior Abdominal Wall: Skin, Superficial And Deep Fascia + Muscles
3.	Nerves, Arteries, Veins And Lymphatic Drainage
4.	Inguinal Canal: Structure, Walls, Functions And Mechanism
5.	External Genitalia: Scrotal Wall And Spermatic Cord With Its Coverings
6.	Testes And Epididymis
7.	Penis
8.	Peritoneum: General Arrangement, Ligaments, Omenta And Mesenteries
9.	Peritoneum: Pouches, Recesses, Spaces And Gutters, Nerve Supply And Functions
10.	Gastrointestinal Tract: Abdominal Esophagus And Stomach
11.	Spleen
12.	Small Intestine
13.	Liver-I
14.	Liver -II + Portal System
15.	Pancreas + Lesser Sac
16.	Biliary System
17.	Large Intestine (Rectum)
18.	Blood, Nerve And Lymphatic System Of GIT
19.	Structure Of The Posterior Abdominal Wall; Lumbar Vertebrae
20.	Muscles And Nerve Supply
21.	Urinary Tract: Kidney
22.	Ureter And Supra Renal Glands
23.	Arteries (aorta) + veins (inferior vena cava)
24.	Lumbar plexus, sympathetic trunk, aortic plexus

UNIT- I TEST	
GROSS ANATOMY: THE PELVIS AND PERINEUM	
25.	Orientation Of Pelvis
26.	Structure Of Pelvic Wall
27.	Muscles
28.	Pelvic Fascia
29.	Nerves: Sacral Plexus, Autonomic Nerves
30.	Arteries: Internal Iliac Vessels
31.	Joints And Sex Different Of Pelvis
32.	Pelvic Viscera's: Sigmoid Colon
33.	Rectum
34.	Urinary Bladder
35.	Male Genital Organs: Seminal Vesicle, Terminal Part Of Vas/ Ducts Deference
36.	Male Genital Organs: Prostrate, Para Urethral Glands
37.	Female Genital Organs: Uterus, Fallopian Tubes
38.	Female Genital Organs: Ovary, Vagina
39.	Clinicals
40.	The Perineum: Introduction, Anal canal
41.	Ischiorectal Fossa
42.	Urogenital Triangle, Superficial Perineal Pouch
UNIT- II	

GENERAL EMBRYOLOGY

Prof. Dr. Abdul Ghafar Ansari

Associate Professor Prof. Dr. Shazia Begum Shahani (Lectures)

LEC #	GENERAL EMBRYOLOGY
1.	Digestive System: Divisions Of The Gut Tube & Mesenteries
2.	Foregut: Esophagus, Stomach
3.	Duodenum – Clinical Correlates
4.	Liver & Gall Bladder
5.	Pancreas Clinical Correlates
6.	Midgut

7.	Clinical Correlates
8.	Hindgut
9.	Urinary System: Kidney
10.	Clinical Correlates
11.	Urinary Bladder
12.	Urethra- Clinical Correlates
13.	Endocrine System: Supra Renal Glands
14.	Endocrine Pancreas
15.	Tutorial
16.	Clinical Correlates
UNIT- I TEST	
17.	Genital System: Gonads- Testis
18.	Gonads- Ovaries
19.	Genital Ducts In Male
20.	Genital Ducts In Female
21.	Clinical Correlates
22.	Vagina
23.	Tutorial
24.	Clinical Correlates
25.	External Genitalia In Male
26.	Clinical Correlates
27.	External Genitalia In Female
28.	Clinical Correlates
29.	Descends Of Testes
30.	Descends Of Ovaries
31.	Tutorial
32.	Clinical Correlates
33.	Urogenital Diaphragm
34.	Contents Of Male Urogenital Triangle
35.	Contents Of Superficial And Deep Perineal Pouches Of Male
36.	Contents Of Female Urogenital Triangle
37.	Contents Of Superficial And Deep Perineal Pouches Of Female
38.	Clinicals

UNIT- II

HISTOLOGY PRACTICALS (IN GROUPS)

Dr. Roheena Noman

PR #	TOPICS
1.	Chapter: Gastrointestinal Tract: Introduction Structure Of GIT, Basic Mucosal Forms, Components Of Wall Of The GIT
2.	Esophagus
3.	Stomach
4.	Small Intestine: Duodenum, Jejunum & Ileum
5.	Colon
6.	Appendix
7.	Chapter: Biliary System: Liver
8.	Gall Bladder + Pancreas
UNIT- I TEST	
9.	Chapter: Urinary System: Kidney
10.	Ureter, Urinary Bladder
11.	Chapter: Male Reproductive System: Testis
12.	Epididymis, Ductus Deference, Seminal Vesicle
13.	Prostate Gland
14.	Chapter: Female Reproductive System: Uterus
15.	Fallopian Tubes, Ovary
16.	Vagina
UNIT- II TEST	

FOURTH SEMESTER

Gross Anatomy: Head & Neck + Neuroanatomy

Prof. Dr. Abdul Ghaffar Ansari, Assoct. Prof. Dr. Shazia Begum Shahani (Lectures)

Dr. Syed Mehfooz Ali Shah, Dr. Hassan Mujtaba (Small Group Teaching)

LEC #	TOPICS
GROSS ANATOMY: HEAD & NECK	
1.	Introduction Of Head & Neck SKULL: Norma Verticals & Occipitals
2.	The Scalp: Structure, Blood Nerve Supply And Lymphatic Drainage
3.	Skull: Norma Frontals + Muscles Of Face
4.	Face: Blood Nerve Supply & Lymphatic Drainage - I
5.	Face: Blood Nerve Supply & Lymphatic Drainage - II
6.	Parotid Region
7.	Triangles Of The Neck Posterior & Sub Occipital Triangles
8.	Anterior Triangle Of Neck And Contents - I
9.	Anterior Triangle Of Neck And Contents - II
10.	Cranial Cavity
11.	Meninges + Dural Venous Sinuses And Pituitary Gland
12.	Bony Orbit
13.	Extra Ocular Muscles
14.	Orbit & Its Contents (Excluding Eye Ball)
15.	Deep Dissection Of Neck
16.	Viscera's Of The Neck – Neurovascular Bundle - I
17.	Viscera's Of The Neck – Neurovascular Bundle - II
18.	Cervical Vertebrae And Pre - Vertebral Region + Root Of The Neck
19.	Skull: Norma Lateralis: Temporal Fossa
20.	Infra Temporal Fossa - I
21.	Infra Temporal Fossa - II
22.	Skull: Norma Basalis, Oral Cavity And Tongue
23.	Palate + Tonsils
24.	Pharynx
25.	Nose Pterygopalatine Fossa

26.	Larynx
27.	Eye
28.	Ear
UNIT - I TEST	
29.	Introduction And General Organization Of Nervous System
30.	Review Of Cranial Cavity And Meninges
31.	Spinal Cord - I
32.	Spinal Cord - II
33.	Medulla Oblongata - I
34.	Medulla Oblongata - II
35.	Pons - I
36.	Mid Brain - I
37.	Mid Brain - II
38.	Cerebellum - I
39.	Cerebellum - II
40.	Ventricles + CSF
41.	Diencephalons - I
42.	Diencephalons - II
UNIT-II TEST	

GENERAL EMBRYOLOGY

Prof. Dr. Abdul Abdul Ghaffar, Assoct. Prof. Dr. Shazia Begum Shahani (Lectures)

LEC #	TOPICS
<u>EMBRYOLOGY</u>	
1.	Head and Neck: Introduction of Pharyngeal Arches
2.	Derivatives of Pharyngeal Arches
3.	Pharyngeal Pouches
4.	Pharyngeal Clefts
5.	Clinical Correlates: Birth Defects Involving The Pharyngeal Region
6.	Face - I
7.	Face - II - Inter Maxillary Segment
8.	Tongue
9.	Thyroid and Thymus Glands + Clinical Correlates

10.	Palate
11.	Nasal Cavities
12.	Development Of Mandible
13.	Teeth
14.	Clinical correlates -Tooth Abnormalities
15.	Eye
16.	Ear
UNIT-I TEST	
17.	Central Nervous System: Formation Of Neural Plate And Tube
18.	Histogenesis Of Nervous System
19.	Development Of Spinal Cord
20.	Neural Tube Defects
21.	Brain: Rhombencephalon: Hindbrain
22.	Brain: Cerebellum
23.	Brain: Metencephalon: Midbrain
24.	Brain: Prosencephalon: Forebrain
25.	Clinical Correlates
26.	Molecular Regulation Of Brain Development
27.	Clinical Correlates
28.	Cranial Nerves
29.	Autonomic Nervous System
30.	Clinical Correlates
31.	Revision
32.	Revision
33.	Cerebrum - I: Topographic Anatomy
34.	Cerebrum - II: (Internal Structure)
35.	Cerebrum - III: (Basal nuclei)
36.	Cerebrum - IV: (Limbic system)
37.	Blood Supply - I
38.	Blood Supply - II
39.	Radiology
UNIT- II TEST	

HISTOLOGY PRACTICALS (IN GROUPS)

Dr. Roheena Noman

LEC #	TOPICS
1.	Oral Tissue: Introduction Palate, Lip, Tooth
2.	Salivary Glands
3.	Tongue
4.	Respiratory System: Nasal Cavity
5.	Larynx and Pharynx
6.	Endocrine Glands: Pituitary Gland
7.	Thyroid and Parathyroid Glands
8.	Adrenal Glands and Endocrine Pancreas
UNIT- II	
9.	Nervous tissue: Neuroglia
10.	Nerves
11.	Ganglia
12.	Central Nervous System: Spinal Cord
13.	Cerebellum
14.	Cerebrum
15.	Revision
UNIT- II TEST	

DEPARTMENT OF PHYSIOLOGY

S. NO.	TEACHING FACULTY	DESIGNATION
1.	Prof. Dr. Mumtaz Ali Memon	Professor
2.	Prof. Dr. Ghulam Murtaza Kaka	Professor
3.	Dr. Ghulam Nabi Pathan	Assistant Professor
4.	Dr. Kavita Bai	Assistant Professor
5.	Dr. Salma Mumtaz	Lecturer
6.	Dr. Fariha Lateef	Lecturer
7.	Dr. Ghulam Sarwar	Lecturer
8.	Dr. Muhammad Hussain	Lecturer
9.	Dr. Muhammad Ismail Soomro	Lecturer

THIRD SEMESTER

SESSION 2014-15

UNIT: I

CHAPTER: GASTRO INTESTINAL TRACT

1. Prof. Dr. Mumtaz Ali Memon,
2. Prof. Dr. Ghulam Murtaza Kaka
3. Dr. Kavita Bai
4. Dr. Ghulam Sarwar
5. Dr. Salma Mumtaz
6. Dr. Muhammad Ismail Soomro
7. Dr. Muhammad Hussain Notkani
8. Dr. Fariha Latif

LEC. #	TOPICS
1.	General Principles Of Gastro Intestinal Functions
2.	Mastication & Deglutition
3.	Composition, Functions & Regulation Of Saliva
4.	Motor Function Of Stomach
5.	Composition, Functions, Regulation Of Gastric Secretion
6.	Movement Of Small And Large Intestine
7.	Composition, Functions, Regulation Of Pancreatic Juice
8.	Composition, Functions, Regulation Of Intestinal Secretion
9.	Composition, Functions Of Bile And Functions Of Gallbladder
10.	Movements Of Colon And Defecation
11.	Digestion And Absorption Of Food
12.	Physiology Of Disorders

CHAPTER: ENDOCRINE SYSTEM

LEC. #	TOPICS
1.	Introduction to Endocrinology
2.	Mechanisms Of Action Of Hormones
3.	Hormones Of Ant: Pituitary
4.	Hormones Of Post: Pituitary
5.	Thyroid Hormones - I

6.	Thyroid Hormones -II
7.	Adrenocortical Hormones: Glucocorticoids
8.	Mineralcorticoids: Aldosterone
9.	Adrenal Medulla
10.	Hormones Of Pancreas And Diabetes Mellitus
11.	Parathyroid Hormones And Calcitonin Hormones
12.	Body Temperature Regulation
UNIT- I TEST	

UNIT: II

CHAPTER: REPRODUCTION

LEC. #	TOPICS
1.	Physiological Anatomy Of The Male Sexual Organs
2.	Spermatogenesis And Semen
3.	Testosterone
4.	Physiological Anatomy Of The Female Sexual Organs
5.	Puberty, Menarche And Menopause
6.	Female Monthly Sexual Cycle
7.	Functions Of Ovarian Hormones
8.	Pregnancy And Lactation
9.	Contraception

CHAPTER: BODY FLUIDS AND KIDNEY

LEC. #	TOPICS
1.	Body Fluid Compartments - I
2.	Body Fluid Compartments - II
3.	Edema - I
4.	Edema - II
5.	Physiology, Anatomy Of Kidney And General Functions Of Kidney
6.	Urine Formation: Overview
7.	Glomerular Filtration
8.	Determination Of The GFR And Renal Blood Flow
9.	Re-Absorption And Secretion Along Different Parts Of The Nephron I

10.	Re-Absorption And Secretion Along Different Parts Of The NephronII
11.	Hormonal Control Of Tubular Re- Absorption And Secretion
12.	Micturation -I
13.	Micturation - II
14.	Mechanism Of Concentrated Urine - I
15.	Mechanism Of Concentrated Urine - II
16.	Mechanism Of Dilute Urine
17.	Role Of Kidneys In Regulation Of Blood Pressure
18.	Acidification Of Urine
19.	Regulation Of Acid-Base Balance - I
20.	Regulation of Acid-Base Balance - II
UNIT- II TEST	

PRACTICAL TOPICS

Dr. Muhammad Ismail Soomro, Dr. Muhammad Hussain & Dr. Fariha Latif

PR #	TOPICS
1.	To Calculate Body Mass Index (BMI) - I
2.	To calculate body mass index (BMI) II
3.	How To Pass Nasogastric Tube (N/G Tube) - I
4.	How To Pass Nasogastric Tube (N/G Tube) - II
5.	To Record Body Temperature - I
6.	To Record Body Temperature - II
7.	To Pass Urinary Catheter - I
8.	To Pass Urinary Catheter - II
9.	Pregnancy Test - I
10.	Pregnancy Test - II
11.	Power Lab - I
12.	Power Lab - II
13.	Power Lab - III
14.	Revision

FOURTH SEMESTER

SESSION 2014-15

UNIT: I

CHAPTER: NERVOUS SYSTEM

1. Prof. Dr. Mumtaz Ali Memon
2. Prof. Dr. Ghulam Murtaza Kaka
3. Dr. Ghulam Nabi Pathan
4. Dr. Kavita Bai
5. Dr. Ghulam Sarwar
6. Dr. Salma Mumtaz
7. Dr. Muhammad Ismail Soomro
8. Dr. Muhammad Hussain Notkani
9. Dr. Fariha Latif

LEC. #	TOPICS
1.	Overview Of CVS *Heart Valves And Their Functions *Circulation Of Blood Within The Heart
2.	Properties Of Cardiac Muscle +Vascular Smooth Muscle & Endothelial Cells
3.	Excitatory& Conductive System Of The Heart
4.	Effect Of ANS On Excitatory & Conductive System
5.	Cardiac Cycle - I
6.	Cardiac Cycle - II
7.	Characteristics Of Normal ECG
8.	Common Cardiac Arrhythmias (Heart Block, Fibrillation & Cardiac Arrest) & Their ECG Interpretation

9.	Common Cardiac Arrhythmias (Heart Block, Fibrillation & Cardiac Arrest) & Their ECG Interpretation
10.	Regulation Of Heart Pumping Intrinsic Regulation (Frank Starling Mechanism)

CHAPTER: RESPIRATION

LEC. #	TOPICS
1.	Overview Of The Respiratory System
2.	Mechanism Of Pulmonary Ventilation
3.	Lung Compliance And Surfactant
4.	Pulmonary Volumes And Capacities
5.	Alveolar Ventilation And Dead Space
6.	Functions Of Respiratory Passages, Cough And Sneeze Reflexes
7.	Pulmonary Circulation, Pulmonary Edema And Pleural Effusion
8.	Respiratory Membrane And Gas Exchange In The Lungs
9.	Transport Of Oxygen In Blood *Oxygen HB Dissociation Curve
10.	Transport of CO ₂ In Blood *Gas Exchange Between Blood And Body Cells
11.	Respiratory Center And Nervous Regulation Of Respiration
12.	Chemical Control Of Respiration

UNIT: II

CHAPTER: CARDIOVASCULAR SYSTEM (CIRCULATION)

LEC. #	TOPICS
1.	Overview Of Circulation *Interrelationship Among Pressure, Flow And Resistance
2.	Veins And Their Function
3.	Fluid Exchange At Capillary Level And Functions Of Lymphatics
4.	Arterial Pressure & Regulation Of Arterial Pressure
5.	Baro-Receptor Feedback Regulation BP
6.	Renin-Angiotensin System In Regulation BP
7.	Physiology Of Circulatory Shock
8.	SV+ Cardiac Output And Venous Return

CHAPTER: RESPIRATION

LEC. #	TOPICS
1.	Regulation Of Respiration During Exercise, Periodic Breathing
2.	Pathophysiology Of Common Lung Diseases
3.	Hypoxia And Oxygen Therapy
4.	Respiratory Changes Associated With High-Altitude

PRACTICAL TOPICS

POWER LAB

Dr. Ghulam Sarwar Dr. Salma Mumtaz

PR #	TOPICS
1.	To Record The Effect Of Respiration During Sitting, Standing And After Exercise - I
2.	To Record The Effect Of Respiration During Sitting, Standing And After Exercise - II
3.	To Record The Effect Of Respiration During Coughing And Deglutition - I
4.	To Record The Effect Of Respiration During Coughing And Deglutition - II
5.	To Record The Lung Volume And Capacities In A Normal Healthy Adult
6.	To Record Effect Of Mental Stress On Respiration
7.	To Record The Pulse Rate At Rest
8.	To Record The Pulse Rate After Exercise

LABORATORY

1.	To Record The Blood Pressure Of A Subject During Sitting And Standing
2.	To Record The Blood Pressure Of A Subject After Exercise
3.	To Record The ECG Of Person - I
4.	To Record The ECG Of Person - II
5.	To Auscultation Of Heart Sound
6.	CPR On Dummies
7.	Revision

DEPARTMENT OF BIOCHEMISTRY

S. NO.	TEACHING FACULTY	DESIGNATION
1.	Prof. Dr. Shah Muhammad Mahesar	Professor
2.	Dr. Ali Akbar Shah	Associate Professor
3.	Dr. Dost Muhammad Kalhoro	Assistant Professor
4.	Dr. Tufail Ahmed	Demonstrator
5.	Dr. Bilqees Memon	Demonstrator
6.	Dr. Kiran Waheed	Demonstrator
7.	Dr. Sana Mahesar	Demonstrator
8.	Ms. Saad-U-Nissa Mahesar	Senior Lab Technician

DISTRIBUTION OF TOPICS OF SYLLABUS

1ST PROFESSIONAL MBBS PART-I

FIRST SEMESTER

(THREE LECTURES/WEEK)

TEACHERS: PROF DR.SHAH MUHAMMAD MAHESAR

PROF. DR.MUHAMMAD ALI MEMON, ASSIST PROF. DR.ALI AKBER SHAH.

UNIT- I

CHAPTER: CELL AND BIOPHYSICS AND BODY FLUIDS

LEC. #	TOPICS
1.	Chemical Composition Of Cell
2.	Subcellular Organelles And Cell Structures
3.	Importance Of Water
4.	Biochemical Composition Of Nutrients
5.	Properties Of Water
6.	Ionization Of Water, Weak Acids & Bases
7.	Dissociation Constant And Titration Curve Weak Acids. The Concept of PK Value
8.	PH,PH Metry, And Indicators
9.	Buffers And Their Mechanism Of Action, Henderson-Hasselbech Equation
10.	Types Of Particles, Solution Separation Of Colloidal Particles, Adsorption
11.	Importance Of Selective Permeable Members, Osmosis
12.	Biochemistry Of Membrane Transport, Mechanism Of Active Transport
13.	Passive Transport. Simple & Facilitated Diffusion
14.	Structure and Functions Of Lipid Bilayer

CHAPTER: CHEMISTRY OF CARBOHYDRATES

LEC #	TOPICS
15.	Introduction, Biochemical Functions And Classification Of Carbohydrate
16.	Structure And Functions Of Monosaccharides And Their Derivate
17.	Structure And Functions Of Monosaccharides And Their Derivatives
18.	Isomersim
19.	Isomersim
20.	Chemical Properties And Reaction Of Monosacchrides
21.	Chemical Properties And Reaction Of Monosacchrides
22.	Disaccharides, Oligosaccharides, Their Combination With Other Macromolecules. Functions And Biomedical Importance
23.	Polysaccharides, Homopolysaccharides
24.	Heteropolysaccharides
25.	Glycosaminoglycans And Peteoglycans
UNIT-I TEST	

CHAPTER: CHEMISTRY OF PROTIENS

LEC#	TOPICS
1.	Introduction to Proteins (Overview; Definition: Importance)
2.	Amino Acids (Chemistry: Classification; Isomers; Signature)
3.	Classification of Proteins (Simple Proteins)
4.	Classification of Proteins (Compound Proteins)
5.	Classification of Proteins (Derived Proteins)
6.	Structural Orangnization of Proteins
7.	Properties of Proteins
8.	Functions of Proteins
9.	Plasma Proteins (Chemistry and Functions)
10.	Plasma Proteins (Chemistry and Functions)
11.	Immunoglobulins (Chemistry and Functions)

CHAPTER: NUCLEOTIDES AND NUCLEIC ACIDS

LEC#	TOPICS
1.	Chemistry And Structure Of Nucleosides And Nucleotides And Their Biochemical Role
2.	Derivatives Of Nucleotides
3.	Role Of Nucleic Acids In Genetics
4.	Structure And Types Of DNA And Distribution Of Genes
5.	Structure, Types And Functions Of RNA
6.	Structure , Types, And Functions Of RNA

CHAPTER: PROPHYRINS AND HEMOGLOBINS

LEC#	TOPICS
1.	Normal Hemoglobin Its Structure, Functions And Types
2.	Abnormal Hemoglobins (Hemoglobinopathies)
3.	Chemistry And Synthesis Of Porphyrins And Its Disorders (Porphyrias)
4.	Oxygen Binding Capacity Of Hemoglobin, Factors Affecting And Regulating The Binding Capacity Of Hemoglobin
5.	Degradation Of Heme Bile Pigments: Formation, Types Transport And Excretion
6.	Hyperbillirubinemia (Jaundice)
UNIT-II TEST	

FIRST SEMESTER**(THREE PRACTICALS/WEEK)**

CONCERNED TEACHERS/ LABORATORY STAFF
Dr. Shahzad Ali Jiskani
Dr. Shafia Memon
Ms. Saad-U-Nissa Mahesar
Mr. Zameer Khan

LAB #	TOPICS
1.	General Introduction Of Biochemistry And How To Use Laboratory Wares
2.	Names Of Chemicals And Reagents
3.	Study & Preparation Of Solution And Reagents
4.	Introduction Of Carbohydrates
5.	Detection Of Unknown Carbohydrates (Molisch's Test, Iodine Test Benedict's Test)
6.	Detection Of Unknown Carbohydrates (Saliwanoff's Barfoed And Osazone
7.	Practical Test of Carbohydrates
8.	Introduction of Proteins
9.	General Test Protein
10.	Precipitation Test Of Protein
11.	Separation Test Of Protein
12.	Practical Test Of Protein
13.	Tutorial Classes/General Discussion From The Practicals Covered; Carbohydrate & Proteins
14.	Completion Of Journals
15.	Practical's Test From All Performed Practical
16.	Getting It Signed By The Concerned Teachers

SECOND SEMESTER

(THREE LECTURES/WEEK)

TEACHERS: PROF DR.SHAH MUHAMMAD MAHESAR

**ASSOCIATE PROF. DR. ALI AKBER SHAH, ASSISTANT PROF. DR. DOST
MUHAMMAD KALHORO**

UNIT: I

CHAPTER: LIPIDS & BIOLOGICAL MEMBRANES

LEC. #	TOPICS
1.	Introduction to Lipids
2.	Biochemical Importance & Functions of Lipids
3.	Fatty acids (Chemistry; Classification; Isomers; Significance)
4.	Classification of Lipids (Simple Lipids)
5.	Classification of Lipids (Compound Lipids)
6.	Classification of Lipids (Derived Lipids)
7.	Cholesterol (Structure and Functions)
8.	Eicosanoids (Structure, Classifications, Functions)
9.	Properties of Lipids
10.	Identification of Fats and Oils
11.	Biochemistry of Cell Membranes (Structure and Function)
12.	Revision

CHAPTER: ENZYMES

LEC. #	TOICS
1.	Introduction, Mechanism Of Catalysis
2.	Chemistry And Structure Of Enzyme & Co – Enzymes
3.	Mechanism Of Enzyme Action
4.	Classification Of Enzymes
5.	Classification Of Enzymes
6.	Properties
7.	Factors Affecting Enzyme Activity
8.	Factors Affecting Enzyme Activity
9.	Enzyme Kinetics

10.	enzyme inhibitors
11.	Diagnostic Role Of Enzymes And Isoenzymes
12.	Revision
UNIT-I TEST	

LEC#	TOPICS
1.	Introduction to Vitamins (Overview: Definition; Importance)
2.	Classification of Vitamins: Fat – soluble Vitamins – Vitamin – A
3.	Vitamin – D
4.	Vitamin – E & Vitamin – K
5.	Water – Soluble Vitamins – Vitamin – C
6.	Vitamin – B Complex – I
7.	Vitamin – B Complex – II
8.	Vitamin – B Complex – III
9.	Vitamin – B Complex – IV
10.	Revision
11.	Revision

UNIT - II

CHAPTER: VITAMINS

CHAPTER: MINERALS & TRACE ELEMENTS

LEC#	TOPICS
1.	Introduction to Mineral Metabolism: Classification of Minerals
2.	Macromolecules (Na, K)
3.	Macromolecules (Ca, PO ₄ , Cl)
4.	Microminerals (Fe, Zn)
5.	Micromolecules (Cu, Mg, Se)
6.	Dehydration
7.	Revision

CHAPTER: NUTRITION

LEC#	TOPICS
1.	Caloric Requirements Of The Body, Balance Diet
2.	Basal Metabolic Rate (BMR), Respiratory Quotient (RQ)
3.	Protein Energy Malnutrition, Marasmus, Kwashiorkor
4.	Composition And Nutritive Value Of Some Importance Foods Etc
5.	Role of Dietary Fibers
6.	Revision
UNIT - II TEST	

SECOND SEMESTER

(THREE PRACTICALS/WEEK)

CONCERNED TEACHERS/ LABORATORY STAFF
Dr. Shahzad Ali Jiskani
Dr. Shafia Memon
Ms. Saad-U-Nissa Mahesar
Mr. Zameer Khan

LAB #	TOPICS
1.	Introduction Of Lipids; & It's Application In Medicine Practical Point Of View
2.	Scheme To Study The Properties Of Lipid Qualitatively
3.	Practical Performance Of Lipids
4.	Introduction Of Normal Constituents Of Fasting Urine
5.	Introduction Of Abnormal Constituents Of Urine
6.	Scheme For The Detection Of Normal Constituents Of Urine (Demonstration)
7.	Practical Performance Of Normal Constituents Of Urine
8.	Practical Performance Of Abnormal Constituents Of Urine
9.	Introduction & composition of milk, comparison of cow's milk with human milk. Scheme for the analysis of milk constituents
10.	Detection Of Carbohydrate And Protein In Milk (Demonstration & Practical) Qualitatively
11.	Detection Of Lipid And Minerals In The Milk (Demonstration & Practical)
12.	BCQs Test And Practical Performance Test Of Milk
13.	BCQs Test And Practical Performance Test Out Of Whole Course Of Practical's
14.	Revision

TAGGED SUBJECTS

SUBJECT: COMMUNITY MEDICINE (5 LECTURES)

FIRST SEMESTER

Teacher's Name: Dr. Ghulam Nabi Memon

LEC#	TOPICS
1.	Introduction Of Community Medicine
2.	Concept Of Health, Disease And Its Dimensions
3.	Health Care Delivery System Of Pakistan
4.	FUNDAMENTALS OF EPIDEMIOLOGY
5.	Introduction to IMNCI

SECOND SEMESTER

Teacher's Name: Dr Khalil Ur Rehman Kazi

LEC#	TOPICS
1.	Macro-Nutrients (Carbohydrates & Diseases Related To Carbohydrates)
2.	Protein Energy Malnutrition
3.	Primary Health Care
4.	Introduction to Air & Ventilation
5.	Air Pollution & Its Effects On Health

SUBJECT: BIOMEDICAL ETHICS

(2LECTURES/CLASSES IN FIRST SEMESTER)

Teacher's Name: Dr. Inayatullah Memon

LEC#	TOPICS
1.	Introduction to Biomedical Ethics
2.	Physician- Patient Relationship

SUBJECT: BEHAVIORAL SCIENCES

(2 LECTURES/CLASSES IN SECOND SEMESTER)

Teacher's Name: Prof. Dr. S. Jamil Hussain

TOPICS	1. What are behavioral sciences? Traditional verses holistic medicine. Bio-psycho-social (BPS) model of healthcare. Link of health with behavioral sciences in health. Correlation of brain & mind with behavioral sciences.
	2. Definition of attention & concentration. Factors affecting them. Memory, stages, types & methods of improving memory. Cognition, level of cognition. Meta cognition.
	3. Principles of learning, modern methods & styles of learning, cognition theories of learning & their use in enhancement of learning.
	4. Motivation & types of motivation.

SUBJECT RESEARCH

(1 LECTURE/CLASS EACH IN FIRST & SECOND SEMESTER)

SUBJECT APPLIED

(8 LECTURES/CLASSES EACH IN FIRST & SECOND SEMESTER)

+ 4 CLASSES BY MEDICINE FACULTY

+ 4 CLASSES BY SURGERY FACULTY

SUBJECT: INFORMATION TECHNOLOGY (IT) FIRST SEMESTER

Teacher's Name: Eng. Danish Hafeez Memon

COMPUTER BASICS

- + Introduction to Information Technology (IT)
- + Microcomputer Advancement and Mobile Computing

COMPUTER FUNDAMENTALS

- + Computer system and its parts

HARDWARE (COMPUTER PARTS)

- + Central Processing Unit CPU
- + Storage
- + Memory
- + I/O devices

SOFTWARE

- + Graphical user interfaces & command line interfaces
- + Types of software

OPERATING SYSTEM

- + Essential of Windows operating system
- + Working with files and folders

INTERNET AND BASIC SEARCH TECHNIQUES

- + Internet concepts
- + Uses of internet
- + Search engine & Basic Search

MS-OFFICE:MS-WORD

- + MS Word screen & Tabs
- + Text, Characters and paragraphs
- + Formatting pages
- + Tables, graphics
- + Word Art and Charts

MS-POWER POINT

- + Working with slides
- + Custom animation
- + Slide transition
- + Graphics
- + Saving & printing

SECOND SEMESTER

Teacher's name: Eng. Danish Hafeez Memon

INTERNET PRODUCTIVITY PACKAGE

- + Introduction of LUMHS Website
- + Intranet & Extranet
- + Personal E-Mail on LUMHS Domain

PERSONAL ASSISTANCE PACKAGE (GOOGLE APPS & OFFICE 365)

- + Electronic Mail Basics
- + Calendar and Scheduling
- + Managing Contacts
- + Tasks
- + Instant Messaging

E-LEARNING

- + Introduction and Importance of E-Learning
- + Introduction of Distance Learning Programs
- + DFHC Model
- + OCW Coursera

SUBJECT: SURGICAL SKILLS (SKILL LAB)

Lab Incharge/Teacher: Dr. Ammara Mahesar

S.NO	FIRST SEMESTER	S.NO	SECOND SEMESTER
1.	Orientation about skill lab	1.	Hand washing(Scrubbing)
2.	Use of stethoscope	2.	Temperature recording
3.	Peripheral pulse examination	3.	BP Monitoring
4.	Evaluation	4.	Evaluation

TABLE OF SPECIFICATION**FIRST SEMESTER**

ANATOMY				
	BCQ's		SHORT ESSAY	
	Q,s	%	Q,s	%
Gross Anatomy (Lower Limb)	17	48.5	3	43
General Anatomy	04	11.5	1	14
General Embryology	07	20	1	14
General Histology	07	20	2	29
Total	35	100	7	100
Tagged Subject (Biomedical Ethics)	--	--	1	--
Total Marks %	70%		30%	
PHYSIOLOGY				
	BCQ's		SHORT ESSAY	
	Q,s	%	Q,s	%
Total	35	100	7	
Tagged Subject (Information Technology)	--	--	1	
Total Marks %	70%		30%	
BIOCHEMISTRY				
	BCQ's		SHORT ESSAY	
	Q,s	%	Q,s	%
	33	95	7	
Tagged Subjects (Community Medicine)	02	05	1	
Total	35	100	--	
Total Marks %	70%		30%	

SECOND SEMESTER

ANATOMY				
	BCQ's		SHORT ESSAY	
	Q,s	%	Q,s	%
Gross Anatomy (Upper Limb)	12	34	2	29
Gross Anatomy (Thorax)	09	26	2	29
General Embryology	03	08	1	14
Systemic Embryology	04	12	1	14
Histology	07	20	1	14
Total	35	100	7	100
Tagged Subject (Behavioral Sciences)	--	--	1	--
Total Marks %	70%		30%	
PHYSIOLOGY				
	BCQ's		SHORT ESSAY	
	Q,s	%	Q,s	%
Total	35	100	7	
Tagged Subject (Information Technology)	--	--	1	
Total Marks %	70%		30%	
BIOCHEMISTRY				
	BCQ's		SHORT ESSAY	
	Q,s	%	Q,s	%
	33	95	7	
Tagged Subjects (Community Medicine)	02	05	1	
Total	35	100	--	
Total Marks %	70%		30%	



Followed By OSPE Examination



Marks Distribution In Each Subject Will Be As Below

ANATOMY+PHYSIOLOGY+BIOCHEMISTRY	
DESCRIPTION	MARKS
Attendance	10
Internal Evaluation + Journal	10
OSPE	80
TOTAL MARKS	100

NOTE

-  In case of lecture is not delivered it will be covered as an extra lecture with other topic
-  All the groups will be taught the same topics by separate group teacher
-  After eight weeks there will be a unit test in all three subjects separately
-  Comprising of a theory paper BCQ'S and short essay
-  Followed by VIVA VOCE/OSPE Examination
-  After sixteen weeks and two weeks preparation leave there will be semester examination in all three subjects separately+ three tagged subjects
-  Comprising of a theory paper 35-BCQ's and 6/8 Short Essay Questions

BOOKS RECOMMENDED

ANATOMY

-  Clinical Anatomy by Richard S Snell. Cunningham's Manual of Anatomy
-  Wheatears Histology, Langman's Embryology, Keith L. Moore Embryology

PHYSIOLOGY:

-  Text book of Physiology by Guyton & Hall. Review of physiology by Ganong
-  Physiology Journal For Practical

BIOCHEMISTRY:

-  Harper's Illustrated Biochemistry By Robert K Murray.
-  Text book of Medical Biochemistry By Chatterjee.
-  Lippincott's Illustrated Review biochemistry By Champe.
-  Principles of Biochemistry By Lehninger.

TEXT BOOK OF BIOCHEMISTRY WITH CLINICAL CORRELATIONS BY DEVIN TM.