2nd Year MBBS

Sixteenth Batch: 2023-28

MODULE IV

Gastrointestinal Tract & Metabolism
Urogenital System

MODULE V

Neurosciences and Metabolism

MODULE VI

Endocrine, Reproductive System & Genetics

STUDY GUIDE

2025

BAHRIA UNIVERSITY MEDICAL COLLEGE, BUHSCK

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MESSAGE FROM THE DESK OF PRINCIPAL & DEAN

Major General (R)
Prof Dr. Shehla M. Baqai HI(M)
MBBS, FCPS (Obstetrics & Gynaecology), FICS, MCPS-HPE
Bahria University Health Sciences Campus Karachi

Heartiest congratulations and welcome to the Bahria University Health Sciences. Selection in medical college is the evidence of shear hard work, incessant struggle and relentless efforts towards achieving the goals. State of the art facilities and adroit faculty of this college will ensure smooth transition from medical student to a highly trained practitioner. The logical convergence towards the aim will be explained stepwise in the study guide which includes forthcoming activities, content and learning strategies.

The highly proficient teaching faculty will provide necessary guidance related to learning objectives, effective use of teaching tools and integrated teaching methods. The curriculum also includes small group interactive methods like Problem Based Learning (PBL) which is a modern and scientific teaching strategy. The study programs support social and moral development of a medical student besides achieving academic excellence. A team of highly trained and professional teachers act as mentors to guide students on social and academics related affairs.

The mandate of medical education is to equip medical professionals with requisite knowledge, skills and attitude. As a medical student it is expected of you to keep an exemplary character and honest morality. Plan and strive hard with full sincerity and devotion. This marks the beginning of your professional career where attitude defines your altitude and acts as a panacea in practical life.

I wish and pray a bright and successful future along with smooth sailing during your five year stay at Bahria University of Medical and Dental College.

Maj. Gen. Prof. Shehla M. Baqai HI(M)
Principal, BUMC & Dean-HS, BU
Bahria University Health Sciences
Campus Karachi

MESSAGE FROM THE DESK OF VICE PRINCIPAL

Dr. Khalid Mustafa,
MBBS, MPhil
Bahria University Medical College,
Bahria University Health Sciences Campus Karachi

Dear Students,

Welcome to the Bahria University Health Sciences Karachi, where you will spend five years of your life in pursuit of knowledge.

This study guide will give you a road map for the forthcoming activities including the objectives, contents, learning strategies and assessment of your educational course; which we regard as essential. Use this study guide as a reference for your "Code of Conduct". It gives policies and rules pertaining to examinations, electives, attendance and rotations etc.

A competent team of experienced professional teaching faculty will guide you towards learning goals in different clinical settings through effective use of different tools of teaching and assessment. You will be encouraged to integrate your learning across the disciplines. Examination questions will not be confined to one discipline but we will assess your knowledge and understanding of i.e. surgery, anatomy, physiology, genetics and pathology simultaneously. Remember this when studying; because one book and one discipline will not suffice.

Teaching in wards, outpatient departments, clinics, problem solving interactive teachings, workshops and small group discussions will be used to help you learn and understand.

Medical science is rapidly changing on the basis of evidence; keeping abreast is our personal responsibility. Use the library frequently which has virtual access to thousands of journals and books through PERN (Pakistan Educational Research Network).

You as medical student are expected to demonstrate professional and responsible behavior towards your teachers, colleagues, health professionals and patients.

I wish all of you best of luck for your future and pray that you all work hard and make yourself and everyone around you, proud.

Dr. Khalid Mustafa
Vice Principal, Medical College
Bahria University Health
Sciences Campus Karachi

ABOUT BAHRIA UNIVERSITY MEDICAL COLLEGE

Bahria University Medical College was established in 2008. Twelve batches of students have passed out and received their MBBS degrees. The College has a beautiful custom built basic sciences wing which also houses the Dental College, an auditorium, a library, video link facilities, a skills laboratory and an advanced multi-discipline laboratory for doing research for M Phil leading to Ph.D. programs.

The clinical teaching wing is PNS SHIFA, a tertiary care hospital which takes care of Armed Forces Personnel, their families, parents and civilian patients. There is a large variety of clinical cases for students to see and learn from. Emergency and intensive care facilities are available. About 1500 patients visit PNS Shifa daily. The outpatient departments in all disciplines are in full use and well organized. Where patients are seen promptly, investigations like laboratory tests, X rays and advanced imaging techniques are available on site. Patients are referred to the concerned department. Doctors work as a team to ensure best care of the patient.

Students will be taken on by teams of doctors and taught clinical management in the best possible setting i.e. the bedside of the patient, in the operation theatre, OPD, emergency room, ICU, CCU and labor room. They will also be taken into the community during their rotation with Community Health Sciences Department, the Students will be taught research methodology and expected to do research work. Students will be observed and continuously provided feedback to improve cognitive and professional skills and behavior. It is expected that students will make a seamless transit from basic sciences to clinical sciences. Each year is organized in 3 modules of 12 weeks each. Each module is assessed separately. It is mandatory for students to appear in the end of module tests or they will not be allowed to sit the annual examinations.

Basic Science Education is assessed at the end of 1st and 2nd year. Clinical training is spread over three years with frequent continuous assessments including end of rotation evaluation. The professional examinations Held in 4th year are Ophthalmology, Otorhinolaryngology (ENT), Medicine, Surgery, Gynecology & Obstetrics, and Pediatrics, are held in the final year (5th Year). In clinical programs, medical students will spend a designated number of hours in clinical settings of various disciplines including medicine, surgery, pediatrics, gynecology & obstetrics, ENT and ophthalmology Medical students will be required to maintain BUHS "Log Book" a record of their learning activities throughout the clinical years from 3rd to 5th year. The BUHS Log Book is also to be used for case discussions and assessment.

Strictly prohibited!
Use of mobile phones in teaching sessions, wards, clinics, examination halls

BUHSCK GUIDE

The Study guide serves as a useful handy resource, helping you to navigate your journey at the Health Science Campus

The Study guide is more than an academic guide.

It not only highlights what, as a student, you should aim to achieve as you work through the curriculum, but also provides essential information about various administrative protocols that you as students of Bahria University are expected to follow.

Vision Statement
To become a knowledge and creativity-driven international university that contributes towards the development of society.

Mission Statement
To produce medical professionals who are humane, ethical and competent physicians and researchers by ensuring excellence in medical education, applied research and practices, in a collegiate environment supported through national and international linkages, to improve the health of community and society.

PROGRAM LEARNING OUTCOME OF THE MBBS PROGRAM:

The MBBS programs aims to produce medical graduates who are able to:

1. Recognize signs and symptoms of common illnesses in population of different ages from different settings, and provide cost effective treatment to alleviate suffering
2. Recognize signs and symptoms of chronic and acute illnesses, and refer to appropriate health care provider for appropriate management
3. Obtain accurate medical history that covers essential aspects of history that relates to individual's health
4. Conduct a complete and focused physical examinations in adults and children in a respectful and logical manner
5. Communicate effectively with patients, relatives, attendants to gather accurate information that will lead to appropriate diagnosis and treatment
6. Demonstrate team work with colleagues, health care team in both college and health care settings
7. Perform procedures and skills in accordance with established protocols and standards
8. Counsel on health promotion to improve the health of individuals, and families including marginalized population
9. Inculcate and demonstrate ethical and moral values in patient care, research and professional development
10. Develop life-long learning skills to keep pace with the exponential growth of information in the field of sciences relevant to health of the individual and population at large
11. Engage in research activity aimed at improvement of quality of health care including behavior modification of individual and community for quality life.

COMPETENCIES

The graduate doctor must be a:

Care provider

Provide care on ethical principles in different settings, emergencies; applies scientific principles of basic, clinical and behavioral sciences to formulate diagnosis; suggest essential investigations, cost effective drugs for treatment. Perform physical examination, basic skills, procedures according to protocol.

Communicator

Interview patients, families skillfully to gather information for formulating diagnosis, treatment; counsel patients, families, communities on health maintenance and promotion; communicate effectively with health care team including peers, supervisors

Advocate for health promotion

Counsel individuals, families, communities on improved lifestyle; maintenance and promotion of health

Professional

Value and Display behaviors befitting to the profession such as honesty, empathy, punctuality, patience, respect for patients and their families, colleagues; accepting one's limitations

Critical thinker

Engage in research projects, assignments, surveys. Search for evidence; analyze facts, data, pros and cons to identify and solve problems. Reflect and write articles, short notes, commentaries.

Lifelong learner

Seek and update knowledge from multiple sources; Consult scientific evidence including journals, web-based knowledge and others; discussion with scholars, practitioners, colleagues; reflection; participation in activities; continuously improve computer skills

Team Worker

Respect and value the contribution of the health team; collaborate with the team to provide efficient patient care.

POLICIES AND COMMITTEES

This section summarizes some key aspects of policies in vogue at Bahria University. The student is advised to read the detail in the latest edition of Bahria University's Student Handbook

Student's Code of Conduct

Every student shall observe the following code of conduct in the University premises, in the University administered hostels (on and off-campus) and places of other activities being held under the auspices of the University:

- Loyalty to Pakistan and refraining from doing anything which is repugnant to its honor and prestige in any way.
- Respect for convictions and traditions of others in matters of religion, conscience and customs while observing own religious duties/customs.
- Truthfulness and honesty in dealing with other people.
- Respect for elders and politeness to all, especially to women, children, elders, the weak and the helpless.
- Special respect for teachers and others in authority in the CUs and BU.
- Cleanliness of body, mind, speech and habits.
- Helpfulness to fellow beings.
- Devotion to studies and prescribed co-curricular activities.
- Observance of thrift and protection of public property.
- Observance of the rules and regulations of the CU in force from time to time.

Prohibited Acts & Misconduct/Ill-Discipline

The following acts shall be unacceptable, and their commission shall be construed as misconduct or ill-discipline:

- Breach of the Code of Conduct.
- Smoking in the areas prohibited by the University.
- Consumption or possession of alcoholic drinks or other intoxicating drugs within the CU/ vicinity or while attending off-site instructions, sports, cultural tours or survey camps.
- Organizing or taking part in any function inside the campus, or organizing any club or society of students, except were permitted and in accordance with the prescribed rules and regulations.
- Collecting donations or receiving funds or pecuniary assistance for or on behalf of the CU except with the written permission of the Head of the CU or any other person authorized in this behalf.
- Staging, inciting or participating in or abetting any walk-out, strike or other form of agitation against BU, its CUs or students, teachers, officers or authorities; inciting others to violence; disruption of the peaceful atmosphere in any way; making inflammatory speeches or gestures which may cause resentment; issuing of pamphlets or cartoons which cast aspersions on the students, teachers, staff or University authorities/bodies; doing anything in a way likely to promote rift and hatred amongst the students; issuing statements in the press; making false accusations against or lowering the prestige of BU or its students, teachers, administrators, staff or bodies.
- Disobeys the lawful orders of a teacher or other person in authority.
- Habitually neglects work or absents from the classroom without valid reason.
- Willfully damages public property or the property of fellow students or any teacher or employees of BU and its CUs.

- Does not pay the fees, fines, or other dues payable under the laid down rules and regulations; uses indecent language; wears immodest dress; makes indecent remarks; gestures; behaves in a disorderly manner; commits any criminal, immoral or dishonorable act (whether committed within the CU or outside) or any act which is prejudicial to the interests of BU and its CUs; and/or
- Commits an act of sexual harassment, as defined in the HEC's document 'Policy Guideline against Sexual Harassment in Institutions of Higher Learning'.

Action against Misconduct

Every member of the faculty shall have the power to check any disorder or improper conduct, or any breach of the rules, by students in any part of the campus or outside when the visit is sponsored or organized by it. Misconduct in a classroom when a student is under the charge of a teacher shall not be allowed and a punitive action such as a fine, removal from the classroom or a punishment of greater magnitude may be imposed as decided by the authority so empowered. The Student Advisor, the Admin Officer or any other employee authorized by the Head of the CU shall be responsible for the maintenance of good behavior and law and order amongst the students on the premises of the CU.

Penalties:

A student guilty of an act of indiscipline shall be liable to the penalties specified below or promulgated through written orders/notifications:

Penalty Code	Penalty	Awarding Authority	Appellate Authority
1	Removal from classroom, laboratory, or field work, for a maximum period of two contact hours	Teacher In-Charge	HOD
2	Expulsion from games or field work for not more than one week	Games/ Field Work In-Charge	Director
3	Expulsion from educational visits and sports tours	DD (Admin & Coord) or an officer authorized by the Head of the CU	Director
4	Suspension from classes for a period not exceeding two weeks	Director/ Principal	Head of the CU
5	Monetary penalties	Director/ Principal	Head of the CU
6	Removal from a position of authority on the advice of the Student Advisor / HOD	Director/ Principal	Head of the CU
7	Expulsion from the hostel	Head of the CU	Next Higher Authority
8	Cancellation of remission of fees/assistantship/scholarship etc.	Head of the CU	Next Higher Authority
9	Rustication for one or more semester	Head of the CU with concurrence of BUHO	Rector
10	Expulsion from the CU	Head of the CU with concurrence of BUHO	Rector

Procedure In case of breach of discipline:

A teacher, a staff member or a BU Officer in whose presence or in relation to whom an act of indiscipline has been committed or who gets to know of such act, may deal with the case him/herself, or if in his/her view the case is one which can be more appropriately dealt by another authority or which warrants a penalty of greater magnitude than they are competent to impose, shall refer the case to the Student Advisor or Deputy Director (Admin & Coord) or the higher authority as the case maybe.

All cases of serious breach of discipline shall be referred to the Disciplinary Committee for investigation which, after due process of investigation, will either impose the penalties if within its powers or recommend them to the Campus Head/Head of the CU/Rector, as the case may be.

When a case against a student is referred to the Disciplinary Committee, it may, if it deems fit, suspend the student from the classes till the finalization of the case, with the approval of the Head of the CU.

Appeals

An appeal against the penalty may be filed by the student with the Appellate Authority within 30 days of announcement of the punishment. No appeal by a student shall be entertained unless it is presented within 30 days from the date of communication of the decision, provided that the Rector may, for valid reasons, extend this period.

No appeal shall lie against the decision of an authority imposing a penalty other than rustication or expulsion except on the grounds that such authority imposed a penalty which it was not competent to impose.

An appeal on the grounds that an authority imposed a penalty which it was not competent to impose, shall lie with the body or person of higher authority than the one who imposed the 44 penalty.

Compensation for loss

The Head of the CU, or any teacher or officer to whom he may delegate the powers, may instruct a student to pay compensation for any loss or damage to property belonging to the CU/University, public authority, a fellow student or an employee of the CU/University, caused by a willful act or gross negligence of the student. If the student does not pay such compensation within a specified period, the Head of the CU will proceed against the student in the manner as prescribed in these rules.

Offences during examination

Cases of indiscipline in or around the Examination Hall, and use of unfair means, shall be dealt with by the Examination Committee.

Dress code:

Male students:

1. Dress/Casual Trousers
2. Jeans (Plain blue) without an image, graphics, and write ups
3. Casual Shirts (Half/ Full sleeves)
4. T Shirts without any messages, images, graphics, and write ups
5. Dress/Casual shoes or Joggers with socks (no sandals)
6. Shalwar Kameez with shoes (only on Friday)
7. Suit/ Combination
8. Coat/ Pullovers/ Sweaters/ Jackets in winter

Female students:

1. Shalwar Qameez (no sleeveless)
2. Hijab, Abaya, Chaddar etc
3. Full length Jeans(no tights) with long shirt/ kurta (knee length)
4. Light jewelry and light makeup
5. Shoes, Sandals and Joggers
6. Dupatta/ Scarf is compulsory with all dresses

NOTE: All BUHSC students are expected to wear white coat during classes, laboratory and hospital rotations, as well as outside the campus, when on official visit.

Student card

Students shall be issued ID Cards. The students shall be required to wear their ID Cards in the campus and show them to the authorized persons on demand.

Loss of ID card

In case ID card is lost, it should be immediately reported to Admin Office who will make arrangements for re-issue of a new card by the University after payment of fine.

Personal behavior

The University expects that all students should sustain professional manner when interacting with colleagues and others. The University recognizes that personalities, characters, and management styles may differ but, notwithstanding these differences, as a minimum standard, all are expected to:

- Work co-operatively with each other to achieve objectives and establish good working relationships.
- All should behave and speak professionally, respectfully, and courteously at all times.
- Tidiness and cleanliness must be always adhered to within the Campus premises which will help us maintain a safe, clean, and professional learning environment.
- Use the college's property, facilities, supplies, and other resources in the most effective and efficient manner.
- Unacceptable behavior such as aggressive or abusive behavior, shouting or personal insults or spreading rumors or gossip, or insulting someone is to be avoided at all costs. All these matters, if experienced, should be reported to the vice principal or your mentor or a senior faculty member.

Punctuality:

Students are expected to arrive in class well in time. All cell phones, smartphones, and other electronic devices (e.g., pagers, iPods) must be turned off and hidden from view during class time. Talking and other disruptive behaviors are not permitted while classes are in session. If the students miss a class, they are themselves responsible for the missed part of the course. It is the student's responsibility to contact a classmate or teacher to determine and cover what was missed.

At BUMC classes start immediately after holidays. There is no lag period after leave. There will be no relaxation for students who are absent. **Please inform your parents of this and make your travel arrangements accordingly**. Avoid taking leave for personal reasons like weddings during the academic year.

Conduct in library

The University campuses have well stocked libraries, and time spent by the students there will meet your research requirements in a calm place. The libraries also provide electronic access through the internet to databases throughout the world.

Library also provides plagiarism detection services

While using the library, Mobile Phones/ iPods/ laptops should be kept on silent mode. Sleeping, listening/ watching drama and music etc, while staying at library is prohibited.

Rules for borrowing books

1. Students are permitted to borrow 3 books at a time for a maximum period of 14 days. Books borrowed may be re-issued on completion of the time period.
2. A valid University card is must for borrowing the Book(s) and other material
3. Textbooks will be issued for 7 working days only but may be reissued the next day of the due date
4. For the Book(s) returned after the due date, a fine of Rs.10/- per day would be charged.
5. Book Bank books will be issued for a period of whole/ one semester.
6. Writing, underling or marking any book is strictly prohibited. Library books are carefully examined on return and the borrower will be held responsible for any damage
7. Following library material will not be issued and must be consulted in the library:
    a. Reference Material.
    b. Thesis/ Project Reports.
    c. Audio/ Video cassettes/ CDs/ DVD's.
    d. Magazines and periodicals.
    e. Newspapers.

Library Timings

DAY	TIMINGS
WEEKDAYS: MON- FRI	8:30 AM to 8:30 PM
WEEKENDS	9:00 AM to 8:30 PM

Conduct in the hospital

When you are working in the hospital be quiet, avoid rowdiness and unnecessary laughter and chatter. Remember the patients need peace, quiet and their rest. You must always weara white coat. Ladies will wear their dupattas inside the white coat and the gentlemen's ties must be tucked inside the shirt so that infection is not carried from one area to the next. Shoe covers, sterile aprons, caps and gowns must be worn where appropriate. Be polite to the patients, greet them appropriately and inquire after their health and wish them well. All nursing staff must be addressed appropriately and politely. Don't hang around once your work is done. Do not eat or drink inside the wards and treatment areas. Avoid making phone calls and put your phones on the silent mode.

Conduct in cafeteria and common rooms

Campus has a cafeterias with a variety of food items and snacks available at reasonable rates

Students are expected to show care, courtesy towards the cafeteria staff as well as to others.

Place garbage and recyclables in the appropriate containers.

This behavior will maintain a clean and enjoyable environment for all.

Academic misconduct and disciplinary committee

The Discipline Committee is responsible for maintaining discipline (both academic as well as conduct), and deals with all cases of indiscipline on the part of students.

It recommends award of penalties/ punishments and renders advice to the Director on administrative matters needed to maintain a peaceful environment on the campus. Intimation will be sent to BUHO for all penalties awarded to a student

Members of the committee

Chairperson	Brig (Retd) Prof. Syed Pervez Ashgar, BUMC
Secretary	Dr. Jaweria Zeesha, BUMC
Members	• Prof. Dr. Khalid Aziz, Principal, BUCPT • Prof. Dr. Ahmed Omer, BUDC • Prof. Dr. Yasmeen Mehar, BUMC • Sr. Associate Prof. Abida Razzaq, VP PNNC
Co-opted member	Varies according to the case

Students are to avoid the following:

a) Unauthorized use of University's name or logo which is property of university.
b) Harassment, sexual or otherwise, or intimidation of any member of university.
c) Coming late for classes. The student may be considered absent and marked accordingly.
d) Improper/inappropriate dress
e) Loud and aggressive behavior in Cafeteria or Common rooms or within the premises of BUHS or PNS Shifa.
f) Non clearance of bills/dues. Non-clearance of dues may prevent student from appearing in the professional examination. The student may also be refused permission to attend classes.

Use of mobile phone

a) Use of mobile phone for photography at cafeteria is restricted.
b) Library is 'NO Mobile Zone' area.
c) Use of mobile in class room is prohibited.
d) Students are not allowed to use mobile phone for photography/ video capturing during farewell parties.
e) Making videos, images, Vlogs etc are monitored through CCTV cameras installed inside and outside building.

Smoking

Student guilty of an act of smoking in the premises of Bahria University/ Constituent Unit or while entering/ attending offsite instructions like sports, cultural tours or survey campus shall be liable to the penalties asunder:

Occasion	Penalties
1st occasion of offence on act of smoking.	Fine of Rs.5000/- along with warning letter with copy to parents from Director Campus
2nd or onward occasion of offense(s).	Fine of Rs.10,000/- along with warning letter (s) with copy to parents from DG Campus on each offence.

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Student guilty of an act of possession/ consumption/ usage/ supplying of intoxication drugs/ Alcoholic drinks in premises of CU and or entering CU or events of BU being intoxicated and or during official/ informal offsite events of the University shall be liable to expulsion from the CU.

Criminal conviction

a) Applicants are required to inform BU of any criminal conviction. Full details are to be provided.
b) The University reserves the right to refuse admission to any applicant with a criminal conviction that may jeopardize the reputation of the University.
c) Failure to declare any criminal conviction by a student already enrolled in BU shall result in immediate cancellation of his/her admission.
d) Where admission to the program is denied on the basis of the criminal conviction, the applicant will be notified of the decision in writing by respective Campuses/CUs

Academic misconduct

Following acts shall constitute academic misconduct:

a) Cheating.
b) Fabrication.
c) Misuse
d) Forgery.
e) Plagiarism.
f) Facilitating academic misconduct.
g) Academic Dishonesty.

The student is advised to refer to their Student Handbook to become fully cognizant of these terms.

Penalties for academic misconduct

TYPE OF MISCONDUCT	PENALTY
Attempt (Successful/ unsuccessful) to know contents of question papers through unfair means prior to examination	***Minor punishment*** a Warning letter (Copy to parents) b. Fine of Rs.2,000. ***Major punishment*** a. Expulsion from the University b. Fine Rs. 5000/00. c. Letter to parents
Possession of written material, relevant to the subject/paper concerned. • Writing on palm, arm or anywhere on the candidate's body or clothes whether the written material is relevant or irrelevant to the concerned paper. • Possession of Mobile phones, Smartwatches, PDAs and other electronics devices, whether or not carrying any relevant or irrelevant material in the memory.	a. Grade 'F' in the subject. b. Fine Rs 5,000. c. Warning, copy to parents. d. Mobile phones/electronic devices to be confiscated. (will be returned after investigation
Giving/receiving assistance or allowing any other candidate to copy from his/her answer books.	***Minor Punishment*** a. Cancellation of the relevant paper. b. Fine Rs 2,000/-. c. Letter of Warning. ***Major Punishment*** a. Grade 'F' in the subject.(for students involved) b. Fine Rs 5,000/- c. Letter of Warning.

Removing a leaf from answer book. Taking the whole or a part of an answer book or a continuation sheet into or out of examination hall.	a. Grade “F” in the subject. (for students involved) b. Fine Rs. 5,000. c. Letter of warning
Substituting the whole or a part of an answer book or a continuation sheet not duly issued to him for the examination;	a. Grade ‘F’ in the subject. (For students involved) b. Fine Rs 5,000. c. Letter of Warning.
Forging, mutilating, altering, erasing or otherwise tampering with marked answer scripts	a. Grade “F” in the subject. (for students involved) b. Fine Rs 5,000. c. Letter of Warning
Impersonation	a. Grade “F” in all subjects of relevant semester studied at BU (including the impersonator/facilitator, if a student of BU). b. Expulsion from the university (including the impersonator/ facilitator, if a student of BU). c. In case the impersonator/facilitator is an ex-student of BU or not a BU student, an FIR may be lodged for the offence, asper law of the land.
Using abusive or obscene language in answer book	a. Grade ’F’ in the relevant course. b. Fine Rs 5,000. c. Letter of Warning.
Refusing to obey the Invigilator or Head Invigilator in the Examination Hall and misbehaving, resorting to misconduct, or creating any kind of disturbance in or around the Examination Hall	***Minor Punishment*** a. Grade ’F’ in the course. b. Fine Rs 5,000. c. Letter of Warning. ***Major Punishment*** a. Rustication for one Semester. b. Grade ‘F’ in the course. c. Fine Rs5,000/ d. Letter of Warning.
Communicating or attempting to communicate with Examiners with the intention of influencing them in the award of marks.	a. Cancellation of relevant paper. b. Fine Rs 5,000. c. Letter of Warning.
Possession of firearms, knives etc. inside and in the close vicinity of Examination Hall	a. Expulsion from the University. b. Fine Rs 5,000. c. Letter of Warning.

Sexual Harassment

All students are required to educate and familiarize themselves about the act/actions categorized as "Sexual Harassment" may it be physical, verbal or while utilizing electronic media and refrain from it being a punishable offence.

Higher Education Commission has issued very strict policy guideline against "Sexual Harassment in Higher Education Institutions (HEI)".

All such policies are strictly applicable and followed in Bahria University.

All students are therefore required to go through the entire policy's contents which are available with campus (concerned HODs) and University/ HEC website.

- The Protection against Harassment of Women at Workplace Act, 2010
- The Protection against Harassment of Women at Workplace (Amndt) Ac& 2022.
- HEC Policy on Protection against Sexual Harassment in HEIs effective 01 July 2020

Committee for protection against sexual harassment in BUHSCK

FOCAL PERSONS	
Prof. Dr. Khalid Mustafa Vice Principal, BUMC Professor of Pharmacology	Cell 0300-21 30868 Phone: 021-35319491-9, ext: 1038 & 1070 Email: khalid.bumdc@bahria.edu.pk drkhaiidmm@yahoo.com
Prof. Dr. Shazia Shakoor HOD, Physiology	Phone: 021-35319491-9 Ext: 1056 Email: shazia.bumdc@bahria.edu.pk shazia2304@hotmail.com
INQUIRY COMMITTEE	
Prof. Shama Asghar, Chairperson Professor of Operative Dentistry Chairperson	Cell 0334-3078082 Phone: 021-35319491-9 ext: 1121 Email: sham.burndc@bahria.edu.pk sham.asqhar24@gmail.com
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Dr Aini Samreer Sr. Associate Professor, Gyn & Obs Member	He 0333-3763592 Phone: 021-35319491-9 ext: 1064 Email aini.bumdc@bahria.edu.pk drsam222@yahoo. Com
APPELLATE BODY	
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Prof. Farzeen Tanwir Vice Principal, BUDC HOD Periodontology Member	Cell 0336-1802464 Phone: 021-35319491-9 Ext: 1104 Email: farzeentanwir21@ gmail.com
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Code of conduct for protection against harassment of woman at the work place

1. An informal approach to resolve a complaint of harassment may be though mediation between the parties involved and by providing advice and counseling on a strictly confidential basis.
2. A complainant or a staff member designated by the complainant for the purpose may report an incident of harassment informally to her supervisor, or a member of the Inquiry committee, in which case the supervisor or the committee member may address the issue at her discretion in the spirit of this Code. The request may be made orally or in writing.

3. If the incident or the case reported does constitute harassment of a higher degree and the officer or a member reviewing the case feel that its needs to be complainant, the case can be taken as a formal complaint.
4. A complainant does not necessarily have to take a complaint of harassment through the informal channel. She can launch a formal complaint at any time.
5. The harassment usually occurs between colleagues when they are alone, therefore usually, it is difficult to produce evidence. It is strongly recommended that staff should report offensive behavior immediately to someone they trust, even if they do not wish to make a formal complaint at the time.

HEC policy on protection against sexual harassment in higher education institutions

1. Higher Education Institutions ("HEIs") are highly consequential institutions in society that are dedicated to the pursuit and dissemination of knowledge. Members of the HEI community have several important rights and privileges, central among which is the right to pursue inquiry and search for knowledge without hindrance from unlawful or otherwise unacceptable constraints. The HEC, takes very seriously the freedom of teachers, researchers, scholars, students to live and work in a safe environment in which their dignity is protected.
2. Protection against sexual harassment is important not only because it threatens the freedom and conduciveness of the environment and the institutions of higher learning. At a more fundamental level, such conduct is unacceptable because its violet personal dignity and shall not be tolerated at HEIs in Pakistan under any circumstance.
3. All administrators, deans, managers, faculty, department chairs, directors of schools or program and others in supervisory or leadership positions have an obligation to be familiar with and to uphold this policy and its procedures along with informing members of their staff about its existence.
4. In order to ensure protection of women against harassment complaint may be lodge by any person who has experienced sexual harassment with either the focal person or with any member of the Sexual Harassment Inquiry Committee.

Students grievances oversight committee

There shall be a Student Grievances Oversight Committee (SGOC), at CU level for each department, to address grievances of students against any teacher, instructor, or administrative staff, with respect to matters of code of conduct, grades, or any administrative matter. The committee shall comprise:

a) Head of CU.
b) HOD.
c) CU Exam-In-charge.
d) Two (2) seniors-most FMs of the department.

If grievance is about the award of a grade, the procedure shall be as follows:

a) The student must submit the grievance, in writing, within seven working days of the receipt of the grade, to the HOD who shall forward it to the SGOC

b) The SGOC shall hear both sides and will give its decision, which shall be final and binding on all parties, within five working days or before the start of registration for the new semester, whichever is earlier.

ATTENDANCE POLICY FOR STUDENTS

Attendance policy for regular students.

PMDC rules for eligibility in annual examinations.

- Minimum attendance requirement is 85% in each subject: attendance is for lectures, demos, practicals, clinics, PBLs, PSILs, CPC, presentations etc: indoor and outdoor
- The attendance is not simply for lectures.
- No shortfall in attendance will be condoned in any case by any authority

Attendance is maintained by the Attendance Department at BUMC.

All students should try and achieve 100% attendance. Every teaching session is essential. For clinical students remember a disease being demonstrated may not be seen during the rest of your stay in the college again. You will make the mistake of a life time by missing the opportunity to attend a clinical demonstration. You must have at least 85% attendance in to be permitted to sit for the professional examination.

- Lecture Attendance is marked at the start of the class.
- Students who come more than 10 minutes late are marked absent.
- A random head count is done to ensure correct entry of attendance.
- The attendance sheet is signed by the teacher and sent to Attendance Department.
- The attendance is entered into the spreadsheet as soon as possible on that day.
- No correction will be made later than 24 hours as the system is then locked.

Attendance for clinics, demonstrations, and practical's etc.

- Student signs the attendance sheet in front of the teacher.
- The teacher countersigns it daily.
- Weekly attendance is given by the CR to the Attendance Department - every Monday.
- Attendance submitted later than Friday of the current week will not be accepted.

The University rules permit a 15% short fall for genuine reasons of personal ill health of a life threatening nature or unavoidable circumstances such as death of a blood relative. This 15% relaxation is not so that you can take a holiday.

If you have less than 85% attendance even for reasons of health, you will be asked to repeat the year. Maintaining adequate attendance is your personal responsibility.

Attendance policy for students repeating a year.

Students who have been asked to repeat the year either because of poor attendance or failure in the professional examination or supplementary examination will attend the classes of the failed subject(s).

- Their previous year attendance will not be considered.
- If their attendance is less than 85% in their current class they will not be allowed to appearin the next examination.
- If a student is repeating one subject then the attendance must be equal to or more

than 75% in that subject. This includes all practical classes, demonstrations, PBL sessions, lecturesand clinical classes.

Attendance policy for students appearing in supplementary exams.

1. Only students who have appeared in a professional examination are allowed to appearin the supplementary examination**.**
2. Those who were not eligible for the annual exam are not eligible for the supplementary exam.
3. Those who did not avail the chance will have to repeat the year and cannot appear in the supplementary.
4. Students will be provisionally promoted to the next class while preparing for thesupplementary examination.
5. Attendance will be marked in the class to which they have been promoted.
6. The student will prepare for the supplementary exam in his/her own time.
7. In case the student fails to pass the supplementary exam he/she will revert to the previous class and the attendance in the new class will be counted in the class to whichthey revert.
8. Those students who do not attend classes will be marked absent and may face ashortage of attendance and will be asked to repeat the year.

Eligibility criteria for appearing in annual professional examinations

A student will be eligible to appear in the annual professional examination if he/she fulfills the following criteria:

1. 85% attendance
2. Must have cleared all financial dues
3. Must have appeared in all three end-of-module examinations
4. No breach of discipline should have occurred for which the Disciplinary Committee hasadvocated a punishment

RESEARCH

BU has a strong emphasis on research and students are not only taught research methodology as part of their curriculum, but also actively engage in research work, under the supervisor of faculty members.

BUHSC has a Research Advisory Committee that has been specifically formulated to guide students in every aspect of their research, from synopsis writing through to publications in peer reviewed journals.

THE MODULES

Organization of modular curriculum and teaching

Each Academic Year is divided into three Modules

- **First Year - Modules - I,II,III**
- **Second Year - Modules - IV,V,VI,**
- **Third Year - Modules - VII,VIII,IX,**
- **Fourth Year - Modules - X,XI,Xll,**
- **Final Year - Modules - XIII,XIV,XV**

The Examining subjects are

- **FIRST AND SECOND YEAR MBBS**
  - Anatomy
  - Physiology
  - Biochemistry

- **THIRD YEAR MBBS**
  - General Pathology Pharmacology
  - Forensic Medicine

- **FOURTH YEAR MBBS**
  - Special pathology,
  - Community Health Sciences Ophthalmology
  - Otorhinolaryngology

- **FINAL YEAR MBBS**
  - Medicine (including Dermatology and Psychiatry),
  - Surgery (including Orthopedics, Urology, Anesthesiology and Radiology)
  - Pediatric medicine
  - Obstetrics and Gynecology

You will be taught clinical subjects from 3rd year as this need to be taught in great detail and the final year is not sufficient. **The attendance for the subjects of medicine, surgery, gyne/obs and pediatrics will be counted from third year.** You will also be taught ethics, Islamiat and communication skills learning objectives for each module are written down in the study guide.

A weekly schedule is placed on the notice board

LEARNING METHODS

Following Learning Strategies encourage active learning

- PBL
- PSIL
- Journal Club
- Interactive lecture,
- Practicals,

- Demonstrations,
- Dissection Hall Teaching
- Clinical Skills learning Skills Lab,.
- Small group discussions
- Bed Side Teaching
- Field / Community field Trips
- Self-Study with feedback
- Seminars, Workshops

The program emphasis on

Problem Based Learning (PBL):
This is a small group activity in which the discussion revolves around a real life problem using the Seven Jump process. Students are expected to consult various learning resources to develop better understanding of the subject. PBL sessions contribute towards internal assessment. Students are expected to attend all PBL sessions.

Self-Directed Study:
Student may achieve the objectives by assuming responsibilities of their own learning. By sharing and discussing with peers, working individually, seeking information from LRC, teachers and resources persons within and outside the college. This is possible by utilizing scheduled self-study period in college, and time outside the college.

Problem Based Learning (PBL): What is it?
It is a student-centered approach encouraging deeper learning. Students learn about a problem by working in groups. In first encounter, a problem which is close to real life situation is given. The problem is generally discussed in two sessions.
Frist Session: Learners in small groups, using existing knowledge, discuss (in the presence of facilitator) and list what they do not know or are not sure of, about the problem, the list is known as learning goals objectives.
Self-Study: Learners have approximately three days, during which learners search for new information required to achieve the learning objectives listed. In this process, learners are encouraged to consult various learning resources in addition to the textbooks. This does not require a tutor.
Second Session: Students present their solution and review what they have learnt. Students engage in self-peer, and tutor review of the classes. Learners discuss learning issues and application of new knowledge to the problem and summarize by integrating prior and new knowledge in understanding the problem.

ASSESMENT POLICY

The student at BUHS will be assessed by following strategy

1. **Continuous / Formative Assessment done throughout the Year**
    - Practical journals, PBL sessions
    - Quizzes and tests

Reflective, constructive feedback is provided

2. **Internal Assessment based upon 03 end of module exams**

Each year is organized in 3 modules. Each module is assessed separately. It is mandatory for students to appear in the end of module exams

End of Module Exam comprises of

- Knowledge assessment by MCQs & SAQs;
- Skills & attitude are assessed by OSPE / OSCEs

The internal evaluation will contribute 20% towards final results
Student not appearing in end of module exams will lose internal evaluation marks

3. **Summative Assessment**
    1. The written examination comprises of three papers (paper 1, 2 & 3). Each paper has
        - MCQs section
        - SAQ section divided into 03 parts (A, B & C)

    2. Practical Examination will consists of 03 OSPE sessions

Eligibility criteria for appearing in annual professional examinations
A student will be eligible to appear in the annual professional examination if he/she fulfills the following criteria:

1. **85% attendance**
2. **Must have cleared all financial dues**
3. **Must have appeared in all three end-of-module examinations**
4. **No breach of discipline should have occurred for which the Disciplinary Committee hasadvocated a punishment**

PASS PERCENTAGE

For all examinations of MBBS courses the percentage of passing marks in each subject shall be 65% i.e. 65 % in theory and 65% in practical.

POLICY FOR ELECTIVES

- Electives are not mandatory nor are they a part of the curriculum. Electives are considered add on extra-curricular activities with benefits for selection for jobs or postgraduate training after MBBS.
- The Electives Rotation will be of four weeks duration.
- It will be planned at least six months in advance during the 3rd or 4th Year.
- The Elective will be planned during the SUMMER HOLIDAYS preferably.
- The institution or department will be of the student's choice.
- During the elective the student will not get credit for attending lectures at BUHS.

- It is the student's responsibility to ensure that his/her overall attendance record is not affected adversely by the elective.
- The student will not proceed on an elective without informing the vice principal.
- The student will sign a waiver to the effect that any shortfall in attendance is his /her own responsibility and will be dealt with as per rules of Bahria University
- The adequacy of education during the elective is the student's own responsibility.
- Permission to attend an elective is given by the Chairperson Student Affair Department designated for this purpose at BUHS. This simply implies that the college authorities are aware that the student is away for this period so that admission is not cancelled.
- The student will ensure that the Elective Supervisor completes an evaluation report at the end of the elective.
- BUHS will not provide any financial assistance for the elective.

STUDENT AFFAIRS AND STUDENT ASSIST PROGRAMS.

Chairperson of student affairs is assigned to cooperate with students and parents concerning academic and non-academic matters and can be contacted according to availability or after setting appointment.

Students' Affairs Office

The Students' Affairs Office coordinates administrative co-curricular and extracurricular activities. Students are advised to approach the coordinator student affairs (CSA) for any academic or non-academic matter.

Liaison with Parents

The Students Affairs Office also serves as a bridge between the College Administration and parents. Students' progress reports will be mailed to parents on request at the conclusion of every term and annual examination. Similarly, the issue of short attendance, college discipline, and violation of college rules and regulations are handled by this Office.

CLUBS FOR EXTRACURRICULAR ACTIVITIES

Different clubs for extracurricular activities are established for students to participate.

1. Literary and debates society
2. Arts and dramatics society
3. Adventure club
4. Event club
5. Community support club
6. Sports club
7. Media club
8. Music club

Within BUHSCK & PNS SHIFA always display your BUHSCK Student Identity Card!

WHOM TO CONTACT?

Administration BUMC

Prof. Dr. Khalid Mustafa, Vice Principal

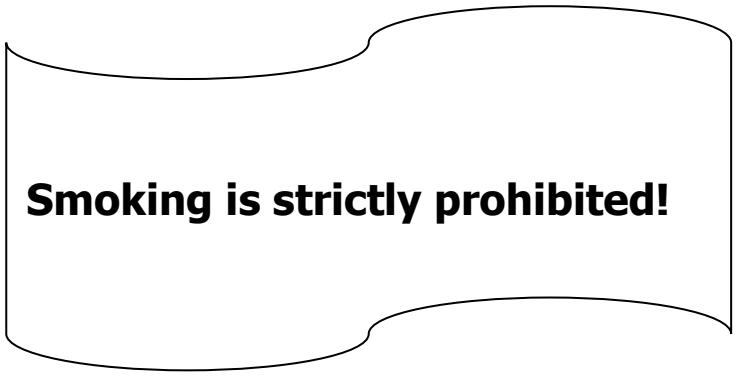
Prof. Dr. Saifullah Shaikh, Academic Coordinator

Brig. (R) Shahid Ali Khan, Clinical Coordinator, BUMC

Prof. Dr. Yasmin Taj, Head of Attendance Department.

Surg. Cdre. Dawood Ahmed, Liaison Officer, PNS SHIFA

Ms. Marvi Bhutto, Chairperson, Student Affairs



MENTORING SESSION

BUHSCK has student assisting programs such as mentoring. Mentors have been already assigned at the start of the teaching program in 1st year. The students will meet the assigned mentor in the mentor's office to discuss academic, non-academic, experiences, problems for advice and guidance

Mentors	Senior Mentor	Program Manager
Dr. Ghazal Raza, Pharmacology	Dr. Fareeha Shahid, CHS	Maj. Gen. (R) Prof. Shehla M. Baqai HI(M) Principal/ Dean
Dr. Ayesha Mehwish, Anatomy		
Dr. Afsheen Nazar, Pharmacology		
Dr. Erum Daud, Pathology	Dr. Quratulain Jawaid, Anatomy	
Dr. Noorulain, Physiology		
Dr. Saira Hassan Askarey, Phsyiology		
Dr. Khawar Abbas, Pathology	Prof. Aisha Qamar, Anatomy	
Dr. Mehwish Mansoor, Pharmacology		
Dr. M. Usman Tayyab, Pathology		
Dr. Sana Ahmed, Biochemistry		

Following will be the meeting schedule:	Duration	Summary submitted to
Mentors (12 minutes with each student)	2 hours / week	Department of Medical Education
Supervisors (with the mentors)	1 hour / fortnightly	
Program Manager (with supervisors)	Last Friday of every month	

Following students will be supervised by mentors as follows:-

S.NO	Senior Mentor	Mentors	Roll numbers
1.	Dr. Fareeha Shahid, CHS	Dr. Ghazal Raza, Pharmacology	1966-1980
2.		Dr. Ayesha Mehwish, Anatomy	1981-1995
3.		Dr. Afsheen Nazar, Pharmacology	1996-2010
4.	Dr. Quratulain Jawaid, Anatomy	Dr. Erum Daud, Pathology	2011-2025
5.		Dr. Noorulain, Physiology	2025-2039
6.		Dr. Saira Hassan Askarey, Phsyiology	2040-2054
7.	Prof. Aisha Qamar, Anatomy	Dr. Khawar Abbas, Pathology	2055-2069
8.		Dr. Mehwish Mansoor, Pharmacology	2070-2084
9.		Dr. M. Usman Tayyab, Pathology	2085-2099
10.		Dr. Sana Ahmed, Biochemistry	3000-3014

INTRODUCTION TO DEPARTMENTS

- **Primary Disciplines**
  - Anatomy
  - Physiology
  - Biochemistry

- **Parallel Discipline**
  - Community Health Science

Department of Anatomy

The Department of Anatomy at Bahria University Health Sciences comprises of well trained and experienced postgraduate faculty members. The subject of Anatomy is one of the core basic science subjects. The teaching methodology adopted is a combination of traditional and newer learning methods.

For student learning, the department includes spacious and well-equipped museum, dissection hall, histology laboratory, and a micro technique section.

S.NO	Name	Designation
1.	Prof. Yasmeen Mahar	Professor / HOD
2.	Prof. Dr. Aisha Qamar	Senior Professor
3.	Prof. Dr. Tasneem Fatima	Professor
4.	Dr. Quratul Ain Omaeer	Sr. Asso. Prof.
5.	Dr. Ayesha Mehwish	Assistant Professor
6.	Dr. Jawaria Zeeshan	Assistant Professor
7.	Dr. Syed Wajahat Hasib	Assistant Professor
8.	Dr. Shahab Shafi	Senior Lecturer
9.	Dr. Mahail Khan	Senior Lecturer
10.	Dr. Huma Azmat	Senior Lecturer
11.	Dr. S. Bilal Yousuf	Lecturer
12.	Dr. Areeba Younus	Lecturer
13.	Dr. Arooba Akram	Lecturer
14.	Dr. Sara Saeed	Lecturer
15.	Dr. Gul E Zehra	Lecturer

Department of Physiology

Human Physiology is the branch of medicine that deals with the study of functions of human body. It is intimately related with Human Anatomy, Biochemistry, Pharmacology, Pathology, Behavioral Sciences. For student learning, the physiology laboratory is very well equipped with latest and modern gadgets, apparatus and instruments.

The learning resources include books, interactive CDs, colorful transparencies, and internet facilities.

S.NO	Name	Designation
1.	Prof. Dr. Shazia Shakoor	Senior Professor / HOD
2.	Prof. Dr. Shaikh Abdul Saeed	Senior Professor
3.	Porf. Dr. Iram Siddiqa	Professor
4.	Prof. Saifullah Shaikh	Professor
5.	Dr. Hina Moazzam	Associate Professor
6.	Dr. Sassi Kanwal	Sr. Asst. Prof
7.	Dr. Fatima Zehra	Sr. Asst. Prof
8.	Dr. Rabia Siddiqui	Assistant Professor
9.	Dr. Sana Akbar	Assistant Professor
10.	Dr. Shazia Junaid	Assistant Professor
11.	Dr. Noor ul Ain	Assistant Professor
12.	Dr. Shadman Nasreen	Senior Lecturer
13.	Dr. Zahra Tapal	Senior Lecturer
14.	Dr. Syeda Faryal Zaidi	Lecturer
15.	Dr. Zakia Aamir	Lecturer
16.	Dr. Saira Hassan Askarey	Lecturer
17.	Dr Muhammad Usman Tayyab	Lecturer

Department of Biochemistry

Biochemistry is the science concerned with the chemical basis of life. The key objective of biochemistry is to learn molecular basis of all biochemical process. Biochemistry encompasses large areas of cell biology, molecular biology, and molecular genetics. Biochemistry and medicine are intimately related. Health depends on a harmonious balance of biochemical reactions occurring in the body,and disease reflects abnormalities in biomolecules, biochemical reactions, and biochemical processes. Biochemical approaches are often fundamental in illuminating the causes of disease and in designing appropriate therapies.

Biochemistry department has a spacious and well equipped laboratory along with one preparation room.

S. No.	Name	Designation
1.	Prof. Dr. Hasan Ali	Senior Professor / HOD
2.	Prof. Mehreen Latif	Principal / Professor
3.	Dr. Sana Ahmed	Associate Professor
4.	Dr. Sadia Rehman	Associate Professor
5.	Dr. M. Faraz Anwar	Sr. Asst. Prof
6.	Dr. Zara Sami	Assistant Professor
7.	Dr. Misbah Riaz	Assistant Professor
8.	Dr. Afsheen Zehra	Assistant Professor
9.	Dr. Madiha Fiaz	Lecturer
10.	Dr. Tayyaba	Lecturer
11.	Dr. Amna Akhter	Lecturer
12.	Dr. Muhammad Mussa	Lecturer
13.	Dr. Saba Basit	Lecturer

Department of Community Health Sciences

The department of community medicine is responsible for training medical students from the first year to fourth year. During this period, students will learn about the holistic concepts of health including physical, mental, social and spiritual health. Students will be exposed to important concepts of anthropology, behavioral sciences, biostatistics, epidemiology, research methodology, demography, psychology, health economics, sociology, health planning, national health policy, health system and other health related issues.

The department of community medicine plans to equip its students with current concepts in research and their applications. Students will be required to complete one research project of public health importance during their training period which will be published in national and international journals. For student learning, also available is models (manikins), charts at community medicine museum

S. No.	Name	Designation
1.	Prof. Dr. Inayat Hussain Thavar	Senior Professor / HOD
2.	Prof. Farid Midhet Mahmood	Senior Professor
3.	Dr. Fareeha Shahid	Associate Professor
4.	Dr. Talha Khan	Assistant Professor
5.	Dr. Fouzia Shariq	Assistant Professor
6.	Dr. Farrukh Zehravi	Assistant Professor
7.	Dr. Ayesha Ayaz	Assistant Professor
8.	Dr. Hira Shaikh	Senior Lecturer
9.	Dr. Mishal Haque	Lecturer
10.	Dr. Sukaina Abbas	Lecturer

Department of Medical Education (DME)

Department of Medical Education is an academic and administrative department that aims to provide educational information and facilitate standards implementation and enhancement in health care delivery. It provides a platform for activities in the areas of curriculum planning and delivery, teaching and learning, student assessment, mentoring and counseling, capacity development, and continuing professional development. Department of Medical Education, BUHS provides a wide range of educational services to faculty and a disciplined approach to manage academic challenges. This department emphasizes on evidence-based education for improving professional medical and dental education. Following faculty members are serving in this department

S. No.	Name	Designation
1.	Maj. Gen. Prof. Shehla M. Baqai HI(M)	Joint Director, DME-Additional responsibility
2.	Dr Khadija Farrukh	Assistant Professor & HOD
3.	Dr Shazia Fakhir	Assistant Professor

CURRICULUM GUIDELINES

Module IV A Gastrointestinal Tract and Carbohydrate Metabolism
Duration **10 weeks**

Module IV B Urinary System
Duration **02 weeks**

Module V Neurosciences, Lipids and Protein Metabolism
Duration **14 weeks**

Module VI Endocrine, Reproductive System & Genetics
Duration **10 weeks**

Module – IV A

Gastrointestinal Tract &

Carbohydrate Metabolism

Duration 10 weeks

Course Learning Outcomes

1. Interpret the structural organization of gastrointestinal system.
2. Discuss the regulation and maintenance of gastrointestinal and renal physiology.
3. Discuss the metabolic pathways involved in carbohydrate metabolism and biochemical basis of water and electrolytes balance

Objectives

1. Categorize the structural organization of GIT(Co)
2. Categorize the functional organization of GIT. (cognitive)
3. Explain the gastrointestinal smooth muscles, functions and its electrical activity(cognitive)
4. Explain the nervous regulation of GIT (cognitive)
5. Analyze the gross anatomy of oral cavity with structure, function and movements of palate (Co)
6. Categorize the types of salivary glands, their location, relations, features and neurovascular supply (Co)
7. Discuss the properties, composition, regulation and functions of saliva, gastric, pancreatic juice, bile, intestinal juice with their clinical disorders (physio/biochem) (cog)
8. Perform the salivary analysis on pathophysiological basis(psychomotor)
9. Distinguish the structure and constrictions of esophagus according to regions with its neurovascular supply and lymphatic drainage (Co)
10. Correlate the mechanisms and nervous control of mastication and swallowing with oral dysphagia(cognitive)
11. Identify the different lumbar vertebrae on the basis of their features (Co, Psychomotor)
12. Identify the bony features of pelvis and the muscles forming the pelvic floor (Co)
13. Correlate the nine regions of abdomen and surface landmarks of abdomen with the abdominal viscera and surgical incisions (Co)
14. Explain the superficial fascia, cutaneous nerves, vessels and lymphatics of abdominal wall (Co)
15. Correlate the muscles of the anterior and posterior abdominal wall with their attachments, nerve supply and actions (Co)
16. Analyze the surgical anatomy of abdominal wall in context of abdominal and inguinal hernia (Co)
17. Demonstrate the peritoneal reflection with attachments and contents of the following (Co, Psychomotor) with the help of cadaveric dissection,
    a. Omentum
    b. Mesentery
    c. Mesoappendix
    d. Mesocolon
18. Interpret the clinical anatomy of peritoneal recesses, supracolic and infracolic compartments and paracolic gutters (Co)
19. Correlate the gross features, internal structure, relations, neurovascular supply, lymphatic drainage with clinical anatomy of stomach on a prosected stomach (Co, Psychomotor)
20. Study the parts and fundamental principles of spectrophotometry (Psychomotor)
21. Perform specimen processing for biochemical analysis in accordance to established standard protocols (Psychomotor)

22. Identify mechanical and hormonal factors involved in gastric emptying and discuss the mechanism of action, regulation and actions of major gastrointestinal hormones namely gastrin, secretin, cholecystokinin and motilin. (cognitive)
23. Explain the nervous and humoral control of gastric secretions (cognitive)
24. Recognize the clinical disorders related to stomach and HCL (cognitive)
25. Discuss the mechanism of vomiting and its clinical significance(cognitive)
26. Identify the risk factors for acid peptic disease (cognitive)
27. Classify drugs used in acid peptic disease (Medicine) (cognitive)
28. Demonstrate the course, relations, neurovascular supply and lymphatic drainage of duodenum, jejunum and ileum on prosected small intestine (Co, Psychomotor)
29. Identify the types of GIT movements. (cognitive)
30. Recognize the types of reflexes essential for the control of GIT(cognitive)
31. Discuss the clinical disorders related to small intestine (Medicine/Physio)
32. Describe the digestion and absorption of carbohydrate with their clinical implications. Biochem (cog)
33. Explain the mechanism leading to malabsorption (Medicine/Physio) cognitive
34. Discuss glycolysis with biochemical basis of its clinical correlation. (cog)
35. Discuss TCA with biochemical basis of its clinical correlation. (cog)
36. Discuss gluconeogenesis with biochemical basis of its clinical significance. (cog)
37. Discuss the biochemical basis of HMP shunt with its clinical disorders(cog)
38. Describe hemolysis in G6PD deficiency with clinical implications. (cog)
39. Describe biomedical importance of Uronic acid pathway along with its clinical significance(cog)
40. Discuss fructose metabolism with biochemical basis of its clinical disorder. (cog)
41. Describe the metabolism of galactose and sorbitol in development of diabetes mellitus (cog)
42. Discuss the ethanol metabolism in alcoholic liver diseases (cog)
43. Discuss glycogen metabolism with biochemical basis of its clinical significance. (cog)
44. Discuss glycogen storage diseases with biochemical basis and their clinical implications(cog)
45. Discuss the regulation of blood glucose during well fed state and starvation (cog)
46. Perform the estimation of blood glucose level by OGTT with Finger Prick Test-Glucometer, manual and kit method in accordance to standard protocols (Psychomotor)
47. Perform the estimation of glucose by glucose oxidase kit method and follin wu method according to established standards (Psychomotor)
48. Perform estimation of HbA1c in accordance to standard protocols (Psychomotor)
49. Correlate the features, parts, relations, neurovascular supply with clinical anatomy of large intestine(Co)
50. Discuss the clinical disorders related to large intestine (medicine/Physio) (cognitive)
51. Describe the epidemiology of diarrheal diseases in under 5-year children
52. Demonstrate the preparation of Oral Rehydration Salt (ORS)
53. Describe the causes and symptomatology of diarrhea.
54. Describe the prevention and management of diarrhea in under 5 - year children according to WHO protocol.
55. Describe the advice to be given to the mother for home care of children with diarrhea.
56. Differentiate between marasmus and kwashiorkor (clinically)

57. Describe the nutritional advice to be given for the management of a child with protein energy malnutrition (PEM)
58. Describe the risk factors and prevention of PEM
59. Plot and interpret growth chart for under 3 – years children.
60. Demonstrate the functional anatomy, peritoneal covering, relations, neurovascular supply and intra-hepatic segments of liver on prosected liver (Co, Psychomotor)
61. Analyze the clinical anatomy of gall bladder, cystic duct and extra-hepatic biliary apparatus(Co)
62. Correlate the functions of liver and gall bladder with reference to hepatobiliary disorders (cognitive)
63. Explain and interpret liver function test (Cognitive)
64. Identify the properties, composition, functions and regulation of bile (cognitive).
65. Interpret the neurovascular supply, clinical anatomy and exocrine parts of pancreas (Co)
66. Recognize the composition, functions and regulation of pancreatic secretion(cognitive)
67. Explain the structure, relations and neurovascular supply of spleen (Co)
68. Distinguish the course, extent and branches of abdominal aorta (Co)
69. Correlate the clinical anatomy of porto-systemic anastomosis with formation, course and relations of portal vein (Co)
70. Explain the formation, extent, course and tributaries of IVC (Co)
71. Discuss the formation and branches of lumbosacral plexus (Co)
72. Perform the surface markings while observing subject protocols on simulated person of: (Psychomotor, Affective)
    a. parotid gland
    b. stomach
    c. liver
    d. gall bladder
    e. spleen
    f. appendix
73. Explain the histological features of (Co)
    a. oral cavity and tongue
    b. salivary glands
    c. pharynx
    d. oesophagus
    e. stomach
    f. small intestine
    g. large intestine
    h. rectum and anal canal
    i. liver and gall bladder
    j. pancreas
74. Explain the development of (Co)
    a. oral cavity and tongue
    b. palate
    c. salivary glands
    d. pharynx
    e. oesophagus

f. stomach
g. small intestine
h. large intestine
i. rectum and anal canal
j. liver and gall bladder
k. pancreas

75. Interpret parts of GIT and related organs on radiography (Plain X-ray, MRI, CT Scan and Ultrasound). (cognitive)
76. Perform the palpation of the abdominal organs on a simulated person (psychomotor, affective)
77. Discuss the endergonic and exergonic reactions with their clinical significance(cog)
78. Describe the Biological oxidation with its clinical disorder. (cog)
79. Explain Respiratory chain, redox potential and oxidation phosphorylation with clinical disorders(cog)
80. Describe the biochemical process of ATP synthesis (cog)
81. Discuss the role of uncouplers and inhibitors in oxidative phosphorylation with their clinical correlation(cog)
82. Calculate body mass index (BMI)(psychomotor)
83. Measure anthropometric parameters in a human subject(affective and psychomotor)
84. Calculate Basal Metabolic Rate (BMR)(psychomotor)
85. Calculate daily energy expenditure of a normal human subject (psychomotor and affective)
86. Perform general physical examination of a human subject(psychomotor and affective)
87. Perform the cadaveric dissection of anterolateral abdominal wall and gastrointestinal tract (psychomotor, Affective)

Module – IV B

Urinary System

Duration 02 weeks

Objectives

88. Demonstrate the structure, location, coverings, relations and clinical correlates of kidney with neurovascular supply and lymphatic drainage (Co)
89. Describe the distribution of total body water, the principle of measurement, concept of water balance and the clinical conditions related to body fluids.(cognitive)
90. Analyze the structure and functions of nephron and discuss the dynamics of renal clearance(Co)
91. Describe the glomerular membrane and juxta-glomerular apparatus and discuss renal clearance with endocrine functions of kidneys (hormones acting on kidney and those that are produced by the kidneys) (cognitive)
92. Explain the Physiological basis of GFR, its measurement and various factors regulating glomerular filtration rate and discuss the myogenic theory and tubuloglomerular feedback. (cognitive)
93. Interpret the process of filtration, reabsorption and secretory functions of nephron(cognitive)
94. Identify and interpret the renal function tests(cognitive)
95. Explain the mechanism of formation of concentrated and dilute urine along with the role of Counter Multiplier and Countercurrent Exchange System(cognitive)
96. Identify the mechanism of action of ADH on renal tubules(cognitive).
97. Discuss the Physiological and Biochemical mechanism of water and electrolyte balance, imbalance with clinical disorder (physio/biochem) (cog)
98. Discuss the sources and absorption of Na+ and K+ balance and imbalance with clinical disorders (physio/biochem) (cognitive)
99. Describe the types, causes and mechanism of metabolic acidosis and alkalosis with clinical significance(cog) (physio/biochem)
100. Describe the types, causes and mechanism of respiratory acidosis and alkalosis with clinical significance (cog) (physio/biochem)
101. Describe the pathophysiological changes in Acute Renal Failure and chronic renal failure with special reference to dialysis and transplantation (cognitive)
102. Relate the structure, relations, neurovascular supply and lymphatic drainage of urinary tract with clinical correlates (Co)
103. Demonstrate the structure and parts of urethra (Co)
104. Discuss the microscopic features of the urinary system with clinical correlates (Co)
105. Correlate the development of the urinary system with congenital malformations (Co)
106. Perform the surface markings of kidneys on a simulated person while observing subject protocols (Cognitive and Psychomotor)
107. Explain the micturition reflex (cognitive)
108. Classify diuretics according to their site of action (Medicine/Physio) (cognitive)
109. Identify the parts of the urinary tract on radiography (Plain X-ray, CT Scan, MRI and Ultrasound) (Co)
110. Perform palpation of kidney on a simulated person (psychomotor)
111. Perform urinary catheterization on a simulated person and analyze physical and chemical properties of Urine. (psychomotor)
112. Perform the urinary tract cadaveric dissection
113. Recognize the common causes of gastrointestinal and urinary disorders in population of different ages using applied anatomical knowledge of radiographic studies and surface anatomy

114. Perform effective dissection and demonstration of prosected anatomical sections to demarcate normal structure from abnormal structures

BIOETHICS

115.. Explain the elements of 'Informed consent'

116. Perform the procedure of informed consent taking process

PLO	CLO	MIT	Anatomy	Physiology	Bio-chemistry	Bioethics	Assessment tools
1-4, 7	1,2,3	LGIS	1, 5, 6, 9, 14, 15, 16, 28, 49,65,67,68, 69, 70, 73, 74, 102, 105	2,3,4,7,10,22,23,24,25,26,27,29,30,31,32,33,50,62,63,64,66,89,90,91,92,93,94,95,96,97,98,99,100,101,107, 108,109	7, 32, 34,35,36,37,38,39,40,41,42, 43,44,45,77,78,79,80,81,97, 98,99,100	115,116	MCQ, SAQ, Oral examination
		SGD	5,6, 9, 11, 12, 13, 14, 15, 17, 18, 19, 28,60, 71, 72, 73,75, 87, 88, 102, 103, 104, 105, 106, 112, 114	2,3,4,7,10,22,23,24,25,26,27,29,30,31,32,33,50,62,63,64,66,89,90,91,92,93,94,95,96,97,98,99,100,101,107, 108,109	7,32,34,35,36, 37,38,39,40,41,42,43,44,45, 77,78,79,80,81,97,98,99,100		OSPE, Oral examination
		DEMO/DIS	12,17,19,,87, 102,104, 114				MCQ, SAQ, Oral examination
		PBL	61	7,101	36, 37, 97		Assessment sheet, MCQ, SAQ, Oral examination
		Lab Skills	73, 104	8,76,82,83,84,85,86,111	20,21,46,47,48		OSPE, Oral examination
		Assignments	74, 76		7,37	115, 116	OSPE, Oral examination
		Self-study	5, 13, 49, 70		43		MCQ
		Skills Lab	76, 110	111			OSPE
		Case studies	73, 74				MCQ, SAQ, Oral examination

LGIS: large group Interactive session
SGD: Small group discussion
Demo: Demonstrations
Dis: Dissection
PBL: problem based learning

COMMUNITY HEALTH SCIENCES

Objectives

- Describe unsafe injections
- Describe environmental and global health
- Describe waste and its disposal
- Describe refuse and methods being employed for its disposal
- Describe water carriage system

Module – V

Neurosciences, Lipid & Protein Metabolism

Duration 14 weeks

Course Learning Outcomes

4. Analyze the morphological and functional organization of nervous system
5. Integrate the clinical significance of the important connection, fibers and tracts with the principal structures of brain
6. Appraise processes and functional properties of all the special senses and nervous system with clinical significance.
7. Correlate the metabolic processes of protein and lipid molecules with their clinical implications.

Objectives

117. Identify the bony features of skull (adult and fetal) with their muscular attachments and contents (Co)
118. Associate the bony features and foramina of skull with structures attached and passing through them (Co)
119. Identify the bony features of mandible and hyoid bone with their muscular attachments (Co)
120. Identify the bony features of cervical vertebrae with their attachments (Co)
121. Demonstrate the scalp, superficial temporal region and face with their muscles and neurovascular supply with the help of prosected specimen (Co)
122. Correlate the muscle movements of mastication with temporomandibular joint and their neurovascular supply (Co)
123. Integrate the boundaries, communications and contents of the pterygopalatine, temporal and infratemporal fossae with their clinical anatomy (Co)
124. Explain the gross structure of spinal cord with it's blood supply and clinical correlates (Co)
125. Analyze the clinical presentation of lesions seen in cross sections of spinal cord at different levels (Co)
126. Relate the clinical anatomy of ascending and descending tracts with their functions (Co)
127. Explain the physiology of synapse and its types and discuss the mechanism of its transmission (cognitive)
128. Classify the types of sensory receptors on the basis of location, adaptation and functions, along with classification of neurons, neuroglia and nerve fibers (cognitive).
129. Interpret the mechanism by which the sensory receptors detect the tactile stimuli (cognitive)
130. Explain the mechanism for touch, pain, temperature, vibration, proprioception transmission of somatic signals into the central nervous system (cognitive)
131. Identify the gross structure and neurovascular supply of the brain stem with the help of a prosected specimen/model (medulla, pons and midbrain) (Co, Psychomotor)
132. Correlate the cross sections of the brainstem with their lesions (Co)
133. Appraise the clinical anatomy of the cranial nerves with their anatomical course (Co)
134. Enlist the functions of somatosensory cortex (cognitive)
135. Enumerate the characteristic features of signal transmission in dorsal column medial lemniscus system and anterolateral system(cognitive)

136. Relate the functions and mechanism of afferent neurotransmission of muscle spindle and golgi tendon organs(cognitive)
137. Recognize the mechanism of different synaptic reflexes (cognitive)
138. Identify the clinical tests and findings that allow a physician to distinguish between upper and lower motor neuron disorders, including the Babinski sign (psychomotor,affective)
139. Differentiate the functions of the major ascending and descending spinal cord tracts, ALS and DCML, pyramidal and extrapyramidal tracts (cognitive)
140. Describe the use of dermatomes, sensory deficits, and motor deficits to identify local spinal cord lesions and spinal cord hemi section (cognitive)
141. Enlist the immediate and long-term consequences of spinal cord transection (cognitive)
142. Relate the external and internal structure of cerebellum with the help of prosected specimen to it's lesions (Co, Psychomotor)
143. Relate the clinical anatomy of cranial meninges in context of neurovascular supply and dural infoldings (Co)
144. Analyze the clinical anatomy of the dural venous sinuses (Co)
145. Correlate the gross structure and cortical areas of brain with the clinical anatomy on the given prosected specimen (Co, Psychomotor)
146. Interpret the functions of the cortical areas of brain with their lesions (cognitive)
147. Describe composition, properties and functions of cerebrospinal fluid along with blood brain barrier and meninges (cognitive).
148. Demonstrate the gross features and relations of the thalamus, sub thalamus, pineal gland and hypothalamus (Co)
149. Interpret the clinical anatomy of basal nuclei of brain (Co)
150. Analyze the clinical correlation of association, commissural and projection fibers of brain, especially internal capsule with their lesions (Co)
151. Discuss the clinical anatomy of limbic system (Co)
152. Evaluate the ventricular system of brain with its secretion, circulation, absorption and functions of CSF (Co)
153. Correlate the blood supply of the brain with clinical anatomy (Co)
154. Demonstrate the contents of vertebral column and vertebral system of veins (Co)
155. Name the triangles of the neck with their boundaries, contents and clinical correlates (Co)
156. Name the vessels, lymph nodes, and nerves of the neck, with their area of supply/ drainage (Co)
157. Explain the ganglia and plexuses of the neck with clinical correlates (Co)
158. Identify the muscles and joints in the prevertebral region of the neck(Co)
159. Perform the surface markings of following structures on a simulated person while observing subject protocols (Psychomotor, Affective)
    a. Facial artery
    b. Common carotid artery
    c. Internal carotid artery
    d. External carotid artery
    e. Subclavian artery

f. External jugular vein
g. Internal jugular vein
h. Facial nerve

160. Identify the normal anatomical structures visible on radiographs of the head and neck (Co)
161. Describe the development of (Co)
    a. Fore brain
    b. Midbrain
    c. Hindbrain
    d. Spinal cord
    e. Skull
    f. Cervical vertebrae
    g. Pharyngeal apparatus
    h. Face
    i. Eye
    j. Ear
162. Describe the microscopic features of(Co)
    a. Peripheral nerve
    b. Spinal cord
    c. Cerebrum
    d. Cerebellum
    e. Eye
    f. Ear
163. Correlate the contents of orbital cavity and eye ball with clinical anatomy (Co)
164. Explain the mechanism of image information in retina (cognitive)
165. Explain the process of accommodation, by the lens in near and far vision(cognitive)
166. Define the refractive errors with their correction(cognitive)
167. Perform the visual acuity on a human subject (psychomotor and affective)
168. Explain the mechanism of photo transduction(cognitive)
169. Explain the visual pathway with its clinical significance (cognitive).
170. Perform tests for field of vision (Perimetry) (psychomotor)
171. Compare the functional properties of scotopic and photopic vision(cognitive)
172. Perform colour vision test on the subject (psychomotor and affective)
173. Enumerate the chemical composition of lacrimal secretion, aqueous humor and vitreous humor (cognitive)
174. Explain the rhodopsin cycle with clinical significances(cognitive)
175. Analyze the gross anatomical features of ear with its neurovascular supply, lymphatic drainage and clinical correlates (Co)
176. Relate the function of hearing and discuss the mechanism of auditory transduction.(cognitive)
177. Trace the auditory pathway and explain the process of sound transmission from external ear to inner ear. (cognitive)
178. Identify and explain different theories of hearing. (cognitive)

179. Perform hearing test on a human subject (psychomotor and affective)
180. Identify the olfactory receptors and explain the transduction mechanisms(cognitive)
181. Trace the olfactory pathway by means of a flowchart. (cognitive)
182. Explain cervical fascia (Co)
183. Discuss pain analgesia system and elaborate gateway control theory. (cognitive)
184. Explain the pain perception and central pain syndrome(cognitive)
185. Distinguish the peripheral and central mechanisms of primary and secondary hyperalgesia and slow vs fast pain (cognitive)
186. Explain mechanism of body temperature regulation in humans (cognitive)
187. Record the body temperature recording in human subject(psychomotor and affective)
188. Examination of sensory nervous system (psychomotor)
189. Correlate the functions of taste receptors and transduction mechanisms(cognitive)
190. Trace gustatory pathway in form of flowchart. (cognitive)
191. Perform tests of sense of taste and smell on a human subject (psychomotor and affective)
192. Distinguish conductive, central, and sensorineural deafness, and list the tests used to assess them (cognitive)
193. Classify drugs used in the treatment of pain (Medicine) (cognitive)
194. Elicit superficial and deep reflexes on a human subject (psychomotor and affective)
195. Perform cranial nerve examination on a human subject (psychomotor and affective)
196. Recognize the effects of lesions in medial and lateral motor systems(cognitive)
197. Perform the cerebellar function tests on a human subject(psychomotor and affective)
198. Differentiate the functions of the pyramidal and extrapyramidal tracts. (cognitive)
199. Explain cerebellar connections and functions. (cognitive)
200. Describe direct and indirect pathways of basal ganglia and Identify the movement disorders associated with basal ganglia and cerebellum(cognitive)
201. Describe the rationale for treatment of Parkinsonism with anticholinergic drugs, l-DOPA, or transplantation of catecholamine-producing cells (Medicine) (cognitive)
202. Distinguish the primary, premotor and supplementary motor cortex (cognitive)
203. Identify the origin, course, and termination of the pyramidal tract(cognitive)
204. Enumerate the consequences of pyramidal tract transection(cognitive)
205. Describe the functional organization of Brodmann areas(cognitive)
206. Identify the speech disorders and their representation in the brain(cognitive)
207. Enlist the higher mental functions and their neurological association(cognitive)
208. Explain the functional organization of autonomic nervous system with emphasis on its characteristic features of its divisions. (cognitive).
209. Correlate the primary types of rhythms that make up the EEG with the behavioral states (cognitive)
210. Explain stages of sleep and changes associated with aging, drugs, and sleep deprivation (cognitive)
211. Interpret normal and abnormal EEG(cognitive)
212. Classify anxiolytic drugs (Medicine) (cognitive)
213. Enumerate the characteristics of generalized and partial seizures (Medicine) (cognitive)
214. Explain the structure and functions of hypothalamus and brainstem(cognitive)

215. Explain the major components of the limbic system (cognitive)
216. Explain the basis and mechanism of memory. (cognitive)
217. Correlate the basis and mechanism of learning, emotional disorders and sexual orientation. (cognitive)
218. Explain the digestion and absorption of proteins and lipids with their clinical disorders (Cog)
219. Discuss the Biomedical importance of fatty acids synthesis (Cog)
220. Discuss the synthesis of triacylglycerol with its clinical disorder. (Cog)
221. Perform estimation of serum triacylglycerols in accordance to standard protocols (psychomotor)
222. Describe the oxidation of fatty acids along with its types and its clinical significance. (Cog)
223. Describe the metabolism of cholesterol and its clinical disorders (Cog)
224. Perform estimation of cholesterol in accordance to standard protocols(psychomotor)
225. Discuss the metabolism of lipoproteins and its clinical disorders(Cog)
226. Discuss the role of anti hyperlipidemic drugs in lowering lipids (Med)
227. Correlate development of coronary heart disease and biochemical basis of atherosclerosis (Cog)
228. Discuss the metabolism of Eicosanoids along with clinical disorders (Cog)
229. Perform and interpret the lipid profile on a given lab data according to standard protocols. (psychomotor)
230. Discuss the metabolism of phospholipids and its clinical significance(Cog)
231. Discuss the metabolism of glycolipids and sphingolipids along with its clinical significance(Cog)
232. Discuss the metabolism of ketone bodies and its clinical significance (Cog)
233. Discuss the biochemical importance of Transamination and Deamination with clinical disorder(Cog)
234. Describe the mechanism of transport of ammonia and the formation of urea. (Cog)
235. Discuss the effects ammonia toxicity on brain(Cog)
236. Perform estimation of blood urea in accordance to standard protocols (psychomotor)
237. Discuss the following individual metabolism of amino acids and their inherited disorders :- (Cog)
    a. Phenyalanine
    b. tyrosine
    c. methionine
    d. cystein, cystine
    e. tryptophan,creatine
    f. leucine, valine,isoleucine
238. Perform estimation of creatinine in accordance to standard protocols (psychomotor)
239. Perform estimation of total plasma proteins in accordance to standard protocols (psychomotor)
240. Discuss the metabolism, biomedical importance and associated diseases of neurotransmitters(Cog)
    a. Acetylcholine

b. glutamate
c. GABA
d. glycine
e. serotonin
f. dopamine

241. Perform the analysis of CSF (protein, chloride, glucose) (psychomotor)

BIOETHICS

242. Discuss the ethical arguments surrounding the 'Duty of Confidentiality' in medical practice.

PLO	CLO	MIT	Anatomy	Physiology	Biochemistry	Bioethics	Assessment Tools
5,6,7,9,10	6,7	LGIS	121, 122, 123, 126 ,132, 133, 142, 146, 149, 150, 151, 156, 157, 161, 162, 182	127,128,129,130,134,135,136,137,139,140,141,146,147,164,165,166,168, 169,171,173,174,176,177,178,180,181,183,184,185,186,189,190,192,193, 196,198,199,200,201,202,203,204,205,206-217.	218, 219,220, 222, 223, 225, 227, 228, 230, 231, 232, 233, 234, 235, 237, 240	242	MCQ, SAQ, Oral examination
		SGD	125, 126, 132, 133, 142, 148, 150, 156, 157, 159, 161, 195	127,128,129,130,134,135,136,137,139,140,141,146,147,164,165,166,168, 169,171,173,174,176,177,178,180,181,183,184,185,186,189,190,192,193, 196,198,199,200,201,202,203,204,205,206-217.	218, 219,220, 222, 223, 225, 227, 228, 230, 231, 232, 233, 234, 235, 237, 240		MCQ, SAQ, Oral examination, OSPE
		DEMO/ DIS	117, 118, 119, 120, 121, 131, 143, 144, 145, 148, 152, 154, 155, 158, 159, 163, 175, 178				MCQ, SAQ, OSPE, Oral examination
		PBL	153	199,205	234, 235		Assessment Sheet, MCQ, SAQ, OSPE, Oral examination
		Lab Skills	138, 159, 160, 162,	167,170,172,179,187,188,191,194,197	221, 224, 229, 236, 238, 239, 241		OSPE and oral examination
		Assign ments	122, 142		218, 237		Assessment sheets
		Self-study	150				
		Case studies	126, 160			123	MCQ, SAQ, Oral examination

LGIS: large group Interactive session
SGD: Small group discussion
Demo: Demonstration
Dis: Dissection
PBL: problem based learning

COMMUNITY HEALTH SCIENCES

- Understand the human behaviors and relationships, encompassing societal institutions
- Analyze the causes, dynamics, consequences & prevention of juvenile delinquency

Module – VI

Endocrine and Reproductive System

Duration 10 weeks

Course Learning Outcomes

8. Develop detailed concepts of, physiological aspects of the endocrine and reproductive systems along with their clinical importance.
9. Relate the gross features of endocrine glands and reproductive tract with clinical conditions
10. Correlate the microscopic features of endocrine and reproductive systems with clinical correlates
11. Correlate the synthesis and biochemical role of endocrine hormones along with clinical importance
12. Relate the DNA replication, transcription, translation with genetic basis of clinical disorders.

Objectives

243. Explain the hypothalamic hormonal regulation of hormones in the body. (cognitive)
244. Discuss the classification, mechanism of action and regulation of hormones (physio/ biochem) (Cog)
245. Correlate the development, structure and neurovascular control of pituitary gland with the clinical pressure effects of tumors (Co)
246. Explain the hormones secreted by the pituitary gland, mechanism of action and regulation. (cognitive)
247. Correlate the structure, biosynthesis, mechanism of action, metabolic role, regulations and clinical disorders of growth hormone (physio/biochem) (Cog)
248. Correlate the structure, biosynthesis, mechanism of action, metabolic role, regulations and clinical disorders of Anti diuretic hormone and its analogues. (physio/biochem) (Cog)
249. Relate the structure, location, relations and neurovascular supply with clinical anatomy of thyroid gland (Co)
250. Correlate the structure, biosynthesis, mechanism of action, metabolic role, regulations and clinical disorders of thyroid hormone (physio/biochem) (Cog)
251. Perform the examination of thyroid gland on a simulated person (psychomotor and affective)
252. Demonstrate immunoassays and their types and principles of ELISA(Psychomotor)
253. Study thyroid profile and perform estimation of TSH in accordance to standard protocols(Psychomotor)
254. Discuss the use of antithyroid drugs (cognitive).
255. Analyze the anatomy of the parathyroid gland with respect to its role in the regulation of calcium and phosphate metabolism (Co)
256. Discuss the structure, biosynthesis, mechanism of action, metabolic role, regulations and clinical disorders of parathyroid hormone (physio/biochem) (Co)
257. Demonstrate physical examination findings in human subjects with parathyroid disorders. (psychomotor)
258. Discuss the structure, biosynthesis, mechanism of action, metabolic role, regulations and clinical disorders of calcitonin (physio/biochem) (Cog)

259. Analyze the role of osteoblasts, osteoclasts, osteocytes, calcitropic hormones and vitamin D in bone remodeling (cognitive)
260. Perform estimation of calcium in accordance with standard protocols (Psychomotor)
261. Perform estimation of uric acid in accordance with standard protocols (Psychomotor)
262. Enumerate the clinical feature of osteopenia, osteoporosis, fragility fractures and tetany (Medicine/Physio) (cognitive)
263. Discuss the drugs used in osteoporosis (Medicine) (cognitive)
264. Interpret the functional anatomy of the pancreas and its endocrine role (Co)
265. Discuss the structure, biosynthesis, pulsatile release, mechanism of action, regulation, metabolic role, destruction and clinical disorders of insulin hormone (Physio/Biochem) (Cog)
266. Discuss the hormonal regulation of glucose (Physio/Biochem) (Cog)
267. Discuss the structure, biosynthesis, mechanism of action, metabolic role, regulations and clinical disorders of glucagon (Physio/Biochem) (Cog)
268. Describe the clinical features, metabolic complications and treatment of diabetes mellitus (Medicine) (cognitive)
269. Demonstrate the structure, location, relations, neurovascular supply and clinical anatomy of suprarenal gland (Co)
270. Correlate effects of mineralocorticoids with salt and water retention in body(cognitive)
271. Distinguish the effects of hyper and hyposecretion of Aldosterone(cognitive)
272. Discuss the structure, biosynthesis, mechanism of action, metabolic role, regulations and clinical disorders of adrenal cortical hormones(glucocorticoids, mineralocorticoids) (Physio/Biochem) (Cog)
273. Discuss the structure, biosynthesis, mechanism of action, metabolic role, regulations and clinical disorders of adrenal medullary hormones (epinephrine and nor epinephrine) (Physio/Biochem) (Cog)
274. Enlist the clinical manifestations of hypersecretion and hyposecretion of cortisol(cognitive)
275. Identify the clinical features of hyperaldosteronism and hypoaldosteronism (cognitive)
276. Enumerate the therapeutically indication of glucocorticoids (cognitive)
277. Explain the developmental anatomy of: (Co)
    - Pituitary
    - Thyroid
    - Parathyroid
    - Pancreas
    - Adrenals

278. Explain the microscopic features of: (Co)
    - Pituitary gland
    - Thyroid gland
    - Parathyroid gland
    - Pancreas (endocrine part)
    - Adrenals

279. Identify the bony features of pelvis and muscles forming the pelvic floor (Co)
280. Relate the clinical importance of the female pelvis in relation to childbirth (Co)
281. Identify the urogenital diaphragm and triangle with its contents (Co)
282. Correlate the structure, location, support and neurovascular supply of ovary and hormones which regulate the ovarian cycle (Co)
283. Discuss the structure, biosynthesis, mechanism of action, metabolic role, regulations and clinical disorders of estrogen, testosterone and progesterone and describe stages of oogenesis. (Physio/Biochem) (Cog)
284. Correlate the physiological and clinical effects of estrogen and other hormone deficiencies in a postmenopausal woman (cognitive)
285. Correlate the clinical anatomy with the structure, location, supports and neurovascular supply of uterus with the help of models (Co)
286. Recognize the changes in endometrium during menstrual cycle (Co)
287. Correlate ovarian and endometrial cycle with hypothalamo – pituitary ovarian axis regulation. (Co)
288. Discuss the menstrual history of a female along with its abnormalities (Menorrhagia, Metromenorrhagia, Oligomenorrhea, polymenorrhea, polymenorrhagia, Amenorrhea) (Gynae/Physio) (cognitive)
289. Explain the mechanism of action of hormonal contraceptives (psychomotor)
290. Explain physiological changes during pregnancy. (cognitive)
291. Perform pregnancy test (psychomotor)
292. Discuss the structure, biosynthesis, mechanism of action, metabolic role, regulations and clinical disorders of oxytocin and prolactin (Physio/Biochem) (Cog)
293. Discuss the biochemical parameters used in evaluation of male and female infertility(Gynae) (Cog)
294. Demonstrate the structure, support, anatomical relations and neurovascular supply of vagina with the help of models (Co)
295. Describe the structure and neurovascular supply of paraurethral glands, vestibular glands, clitoris, labia minora and labia majora (Co)
296. Correlate the layers, position and neurovascular supply of scrotum with clinical anatomy (Co)
297. Correlate the structure, support, and neurovascular supply of testis, epididymis, vas deferens, seminal vesicle and ejaculatory duct in relation to clinical anatomy (Co)
298. Correlate the biosynthesis, mechanism of action and metabolic role of hormones affecting spermatogenesis (Physio/Biochem) (cognitive)
299. Recognize different seminal parameters for semen analysis (psychomotor)
300. Correlate the structure, histological features and neurovascular supply of prostate with its clinical anatomy (Co)
301. Discuss the structure and neurovascular supply of penis
302. Define the basic terminologies of reproductive health
303. Describe WHO strategies for safe motherhood
304. Describe the components of reproductive health.

305. Explain baby friendly hospital initiative in Pakistan
306. Describe different measures of growth monitoring
307. Explain the advantages and disadvantages of breast feeding
308. Describe the common problem in lactation
309. Describe various methods of contraceptive methods, their advantages and disadvantages
310. Analyze the boundaries and contents of ischiorectal fossa with its clinical anatomy (Co)
311. Explain the development of gonads, female genital tract, male genital tract and its aberrations (Co)
312. Explain the histological features of gonads, and female and male genital tract (Co)
313. Perform a research in a group on endocrinology and reproductive anatomy (Psychomotor, Affective)
314. Perform estimation of bilirubin in accordance with standard protocols(Psychomotor)
315. Perform estimation of serum leptin in accordance with standard protocols (Psychomotor)
316. Integrate the classification, mechanism of action of hormones with respect to its role in synthesis, storage and regulation and discuss in detail the applied physiology and biochemistry of each hormone.
317. Enumerate the properties and functions of reproductive hormones and correlate the ovarian and endometrial cycle with hypothalamopituitary axis regulation and discuss structural and operative physiology of reproductive system integrating it with applied physiology.

GENETICS

318. Discuss the digestion and absorption of nucleic acids with its clinical disorders (Cog).
319. Discuss the purine metabolism with biochemical basis of its clinical disorders (Cog).
320. Discuss the pyrimidine metabolism with biochemical basis of its clinical disorders (Cog).
321. Describe the process of replication of DNA, mutation and DNA repair with biochemical basis of its clinical disorder. (Cog)
322. Describe the process of transcription, RNA process with biochemical basis of its clinical disorder. (Cog)
323. Describe the process of translation and genetic code with biochemical basis of its clinical disorder. (Cog)
324. Describe the regulation of Gene expression with biochemical basis of its clinical disorder. (Cog)
325. Discuss the mechanism of Genetic Disorders. (Cog)
326. Discuss the basic techniques used in molecular genetics. (Cog)

BIOETHICS

327. Debate on the ethical perspectives of privacy of patients.

Program Learning Outcomes	Course Learning Outcomes	MIT	Anatomy	Physiology	Biochemistry	Bioethics	Assessment Tools
1,5,9,10,11	10, 11, 12	LGIS	245, 249, 255, 264, 277, 278, 282, 311, 312	243,244,246, 247,248,250, 254,256,258, 259,262,263, 265,266,267, 268,270,271, 272,273,274, 275,276,283, 284,286,287, 288,290,292, 293,298,316, 317	244, 247, 248, 250, 256, 258, 265, 266, 267, 272, 273, 283, 292, 298, 318, 319, 320, 321, 322, 323, 324, 325, 326	327	MCQ, SAQ, Oral examination
		SGD	245, 249, 255, 264, 277, 282, 295, 296, 297, 300, 301, 311	243,244,246, 247,248,250, 254,256,258, 259,262,263, 265,266,267, 268,270,271, 272,273,274, 275,276,283, 284,286,287, 288,290,292, 293,298,316, 317	244, 247, 248, 250, 256, 258, 265, 266, 267, 272, 273, 283, 292, 298, 318, 319, 320, 321, 322, 323, 324, 325, 326		MCQ, SAQ, OSPE, Oral examination
		DEMO/DIS	269, 279, 280, 281, 285, 294, 310				MCQ, SAQ, OSPE, Oral examination
		PBL	251	256,288,293	283, 292		Assessment sheet, MCQ, SAQ, OSPE, Oral examination
		Lab Skills	251, 278, 312	251,257,289, 291,299	252, 253, 260, 261, 314, 315		OSPE, Oral examination
		Assignments	297				Assessment sheet
		Self-study	296				
		Case studies	278				MCQ, SAQ, Oral examination

LGIS: Large Group Interactive Session
SGD: Small Group Discussion
Demo: Demonstration
Dis: Dissection
PBL: Problem Based Learning

PAPERWISE DISTRIBUTION OF TOPICS FOR INTEGRATED ASSESSMENT

MODULE IV

Paper	Topics	Learning Objective Number
PAPER- I	Gross Anatomy and Radiology of the Abdominal Region and Gastrointestinal System. smooth muscle properties and function, saliva, mastication, swallowing, nervous regulation of GIT, movements of GIT, Salivary analysis, Abdominal Examination and General Physical Examination. Composition and function of GI secretions, digestion and absorption of CHO, carbohydrate metabolism, spectrophotometer, specimen processing	2,3,4,7,8,10,12,1, 5, 6, 9, 11-19,28,49,60,61,65, 67-72,75,87,82,83,84,85,86 7,32,34,35,36,37,38,39,40,41,42,20,21
PAPER- II	Embryology and Histology of Gastrointestinal System. GI reflex and GI movements, GI hormones, HCl and pancreatic secretion. Liver and Gallbladder, GIT disorders, Introduction to renal physiology, Body fluids, GFR and its regulation, BMI, BMR, Anthropometry, Daily Energy Expenditure. glycogen metabolism, glycogen storage diseases, regulation of blood glucose, biological oxidation and oxidative phosphorylation, estimation of glucose by manual n kit method	22,23,24,25,26,29,50,30,33,62,64,66, 82,83,84,85,89,90,91,92. 73,74, 43,44,45,77,78,79,80,81,47
PAPER- III	Gross, Embryology, Histology, & Radiology of the Urinary System. Tubular reabsorption, renal clearance, counter-current mechanism, Endocrine functions of kidney, Acid base disorders, renal disorders, dialysis and transplantation, Micturition, urinary catheterization, palpation of kidneys, Physical and Chemical analysis of Urine. water and electrolyte metabolism with acid base balance and imbalance, OGTT, HbA1c	88,102-106,109,110, 112, 113, 114,90,91, 93,95,98,99,100,101,110, 107,110,111 97,98,99,100,46,48

MODULE V

Paper	Topics	Learning Objective Number	Assessment Tools
PAPER-I	Gross Anatomy of Head and Neck: Osteology of skull, scalp, face, eye, ear, cervical fascia, cranial fossae (pterygopalatine, infratemporal & temporal), muscles and microvasculature of neck, radiological and surface marking. Synapse, Neurons, Neuroglia, Receptors, Sensory and Motor pathways, UMN and LMN lesions, Integumentary System. Examination of Sensory and Motor system, body temperature, digestion and absorption of lipids, fatty acid synthesis and oxidation, synthesis of TAGs, metabolism of cholesterol, sphingolipids and glycolipids, lipid profile, estimation of TAG and cholesterol	117-123, 155-160, 163, 175, 182,127,128, 129,130,135,139,140,141,186,187,188, 203,204. 218,219,220,222,223,231221,224,229	One best MCQ SAQ OSPE VIVA
PAPER- II	Neuroanatomy: Tracts, Gross anatomy of the spinal cord and its lesions, Meninges, Gross anatomy of the cerebrum, brain stem, and cerebellum; Cortical areas of the cerebrum, Blood supply of the brain, Dural venous sinuses, Ventricles, Vertebral column and the vertebral system of veins, Cranial nerves and their examination, Radiology, Surface Marking Pain physiology, Basal ganglia, Cerebellum, Speech and language, Memory and learning, CSF, BBB, Meninges, Cerebral Cortex, Brainstem, Sleep and EEG, Reflexes,Examination of Cranial nerves, Superficial and Deep reflexes, Biochemical basis of atherosclerosis, metabolism of lipoprotein, ketone bodies, phospholipids, eicosanoids,	124-126, 131-133, 138, 142-146, 148-154, 195,147,183,184,185,194,200,201,202, 205,206,207,208,209,210,211,214,216, 217 218,225,227,228,230,232,233,234,235, 236,238	One best MCQ SAQ OSPE VIVA

	digestion and absorption of proteins , transamination deamination, mechanism of transport of ammonia, urea cycle and ammoniatoxicity, estimation of urea and creatinine		
PAPER- III	Neurosciences (Embryology & Histology): Development of the face, brain (forebrain & hindbrain), spinal cord, and vertebral column; Histology of the eye, ear, spinal cord, cerebrum, and cerebellum. Limbic system, Vision, ANS, Vision, Accommodation, Errors of Refraction, Visual Acuity, Phototransduction, Visual Pathway, Perimetry, Scotopic and Photopic vision, Color vision, Rhodopsin cycle, Hearing, Hearing tests, smell and taste, metabolism of amino acids and neurotransmitters, estimation of total plasma proteins, CSF analysis	161,162, 164,165,166,167,168,169,170,171,172, 174,176,177,178,179,180,181,189,190, 191,192,208,215. 237,240,239,241	One best MCQ SAQ OSPE VIVA

MODULE VI

PAPER	TOPICS	LEARNING OBJECTIVE NUMBER	Assessment Tool
PAPER-I	Gross anatomy, embryology, histology, and surface marking of the endocrine system. Introduction to endocrinology, classification and mechanism of action of hormones, anterior and posterior pituitary hormones, hypothalamus-endocrine system, thyroid hormone and its disorders and GH, Thyroid gland examination, BMI and GPE digestionand absorption of nucleic acid, metabolism of purine and pyrimidine, DNA replication ,transcription, translation, mutation, DNA repair, regulation of gene expression, basic techniques in molecular genetics, genetic disorder, ELISA, estimationof uric acid	245, 249, 251, 255, 264, 269, 277, 278, 243.244,246,247,248,250,251,254,292, 318,319,320,321,322,323,324,325,326, 252,261	One best MCQ SAQ OSPE VIVA
PAPER- II	Gross anatomy, embryology, and histology of the male genital tract. PTH, Vitamin D, Adrenal cortex and medullary hormones, Adrenocortical disorders, Insulin, glucagon and diabetes, Glucose estimation and parathyroid gland examination and disorders. Classification, MOA of hormones, regulation, GH, ADH, pituitary hormones, thyroid, parathyroid, calcitonin, estimation of TSH, calcium	296, 297, 300, 301, 311, 312 256,257,258,259,262,263,265,266,267, 268,270,271,272,273,274,275,276. 244,247,248,250,256,258,253,260	One best MCQ SAQ OSPE VIVA
PAPER- III	Gross anatomy, embryology and histology of female genital tract. Menstrual cycle and abnormalities, reproductive hormones, pregnancy, lactation, male reproductive system, infertility, Semen analysis, Pregnancy test and Contraceptive methods. Neonatal Physiology. Insulin, glucagon, regulation of blood glucose, adrenalcortex and medullary hormones, estrogen, progesterone,	280, 282, 285, 294, 295, 311, 312. 283,284,286,287,288,289,290,291,293, 298,299. 265,266,267,272,273,283,292,298,314, 315	One best MCQ SAQ OSPE VIVA

	testosterone, oxytocin, prolactin, estimation of leptin and bilirubin		

COMMUNITY HEALTH SCIENCES (BLOCK TEACHING)

Objectives:

- Identify the concept of Qualitative research
- Clarify the different sources of data collection methods
- Formulate a qualitative research report with ethical consideration
- Identify Concepts and Applications of sociology.
- Recognize Social Determinants of Health and its related Concepts and Applications.
- Elaborate the concept of mental health
- Explain different Types of behavioral Issues, Their Impact on Health and Consequences.
- Participate in prevention and control strategies for behavioral illnesses.
- Describe child labor Prevalence, Consequences, and Status at National Level.

Teaching Strategies	Assessment Tools
Discussion LGIS SGD	Assignment CAT exam

Tutorial activities Session

Types of Research and study design

Communication Leadership and Professionalism

Learning objectives	Instructional strategies
• Appreciate the role of patient's nonverbal behaviors and voice tone in effective communication. • Communicate using a patient-centered approach that encourages patient trust and autonomy and is characterized by empathy, respect, and compassion • Understand role of leadership in health care system • Discuss different strategies to manage time and resources effectively • Develop a comprehensive set of practical skills and tools to rely on like time management, agenda setting, group dynamics, and team building • Work cooperatively in groups, share ideas and take part in discussion • Practice honesty and integrity in all interactions • Advocate for the needs and wellbeing of patients, learners and peers	• Small group discussion video presentation with multiple scenarios • Role play • Demonstration on Standardized patients • Small group exercises • Student's presentations. • PBL, PSIL, Journal club

LEARNING RESOURCES

RECOMMENDED BOOKS

Anatomy

1. K.L. Moore, Clinically Oriented Anatomy
2. B. Young, J.W. Heath Wheater's Functional Histology
3. Keith L. Moore. The Developing Human
4. Medical Histology by Laiq Hussain
5. Langman's Medical Embryology

Physiology

1. Arthur C. Guyton, John E. Hall., Textbook of Medical Physiology
2. Sherwood, Lauralee. Human Physiology: from cells to systems

Biochemistry

1. Robber K. Murray, Daryl K. Granner, Peter A. Mayes, Victor W. Rodwell. Harper's Biochemistry
2. Pamela C. Champe, Richard A. Harvey. Lippincott's Illustrated Review of Biochemistry

CHS

1. K. Park, Parks Textbook of Preventive & Social Medicine,
2. Muhammad Ilyas etal , Community Medicine and Public Health
3. Kumza JW, Bohnenblust SE. Basic Statistics for the Health Sciences

ACADEMIC CALENDAR

BAHRIA UNIVERSITY HEALTH SCIENCES CAMPUS KARACHI
Second Professional MBBS
Batch 2023-2028
Academic Calendar

SESSION STARTS
30th December 2024 (Monday)

FOURTH MODULE (12 WEEKS)

Module Starts	-	30th December 2024 (Monday)
Module Ends	-	20th Mar 2025 (Thursday)
Theory Examination	-	21st, 24th & 25th Mar 2025 (Friday, Monday & Tuesday)
OSPE / Viva Examination	-	26th, 27th & 28th Mar 2025 (Wednesday, Thursday & Friday)
Eid-ul-Fitr Vacations*	-	31st Mar 2025 to 4th Apr 2025 (Monday to Friday)

FIFTH MODULE (14 WEEKS)

Pre-Vacation Session (09 Weeks)

Module Starts	-	7th Apr 2025 (Monday)
Module Break	-	6th Jun 2025 (Friday)
Eid-Ul-Adha Vacations*	-	9th Jun 2025 to 20th Jun 2025

Post-Vacation Session (05 Weeks)

Module Starts	-	23rd Jun 2025 (Monday)
Module Ends	-	25th Jul 2025 (Friday)
Theory Examination	-	28th, 29th & 30th Jul 2025 (Monday, Tuesday & Wednesday)
OSPE / Viva Examination	-	31st, 1st & 4th Aug 2025 (Thursday, Friday & Monday)

SIXTH MODULE (10 WEEKS)

Module Starts	-	5th Aug 2025 (Tuesday)
Module Ends	-	10th Oct 2025 (Friday)
Theory Examination	-	13th, 14th & 15th Oct 2025 (Monday, Tuesday & Wednesday)
OSPE / Viva Examination	-	16th, 17th & 20th Oct 2025 (Thursday, Friday & Monday)

FINAL EXAMINATION: - **November / December 2025**

PROF. DR. SAIFULLAH SHAIKH
Academic Coordinator (Medical)
BUHSCK

DR. KHALID MUSTAFA
Vice Principal (Medical)
BUHSCK

*** Subject to sighting of Moon**