

ACADEMIC PROGRAM GUIDE

Third Year MBBS

Forensic Medicine & Toxicology





Introduction

Medical profession is not only the noblest one, but very complex, as well. This demands a great deal of commitment, respect for humanity, orientation to a multi-cultural society and keeping oneself abreast of ever-growing knowledge base. A good doctor should be knowledgeable, skillful and display highest of moral values in his/ her attitude.

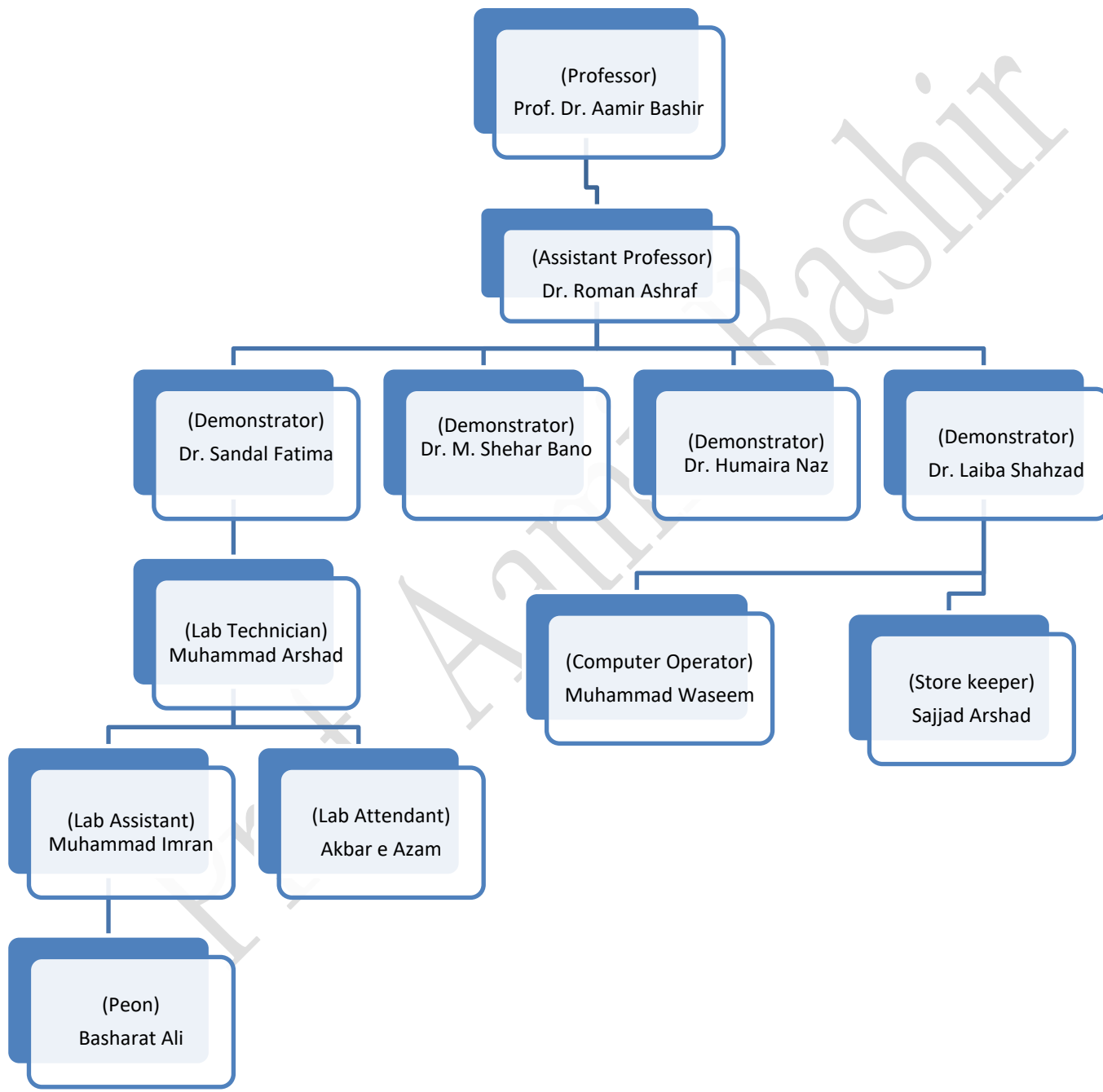
This guide is prepared keeping in view the premise of 'seven-star doctor' by PMC and Mission of LM&DC. It is expected to solve many relevant queries of students and shepherd them through their course of Forensic Medicine & Toxicology and MBBS program.

Mission of LMDC

The Lahore Medical & Dental College is committed in its pursuit of excellence to providing the best academic facilities and atmosphere to its students.

Our **mission** is to: "Train future leaders of medicine who set new standards in knowledge, care and compassion".

The well qualified and committed faculty of LMDC provides combination of nurturing support and challenge to the students to reach their maximum potential.



Educational Methodologies

1. **Large group Session**
 - i. Power point presentation
 - ii. White board, models
 - iii. Equipment
 - iv. Weapons, radiographs
 - v. Mannequins

2. **Practical (Demonstration and Performance)**
 - **Six different practical**
 - i. Forensic Serology
 - ii. Forensic Toxicology
 - iii. Forensic Anatomy
 - iv. Forensic Radiology
 - v. Forensic Autopsy
 - vi. Medico legal Certificate
 - **>30 practical demonstration to each batch**
 - **Two to three OSPE mocks**

3. **Tutorials**

4. **Small group discussions**
 - i. Highly interactive

- ii. Analytical discussion

5. Skills lab – Six skills are practiced

6. Field trips

- i. Autopsy Facility
- ii. Medico legal clinics
- iii. Punjab Forensic Science Agency

7. Two comprehensive assignments

8. Seminar

Maintenance of Record:

- i. Attendance record (daily, monthly, quarterly)
- ii. Performance record (monthly, quarterly)
- iii. In the form of 'one page' mini – portfolio format (Annual)

Paper-based & Electronic

Question Bank:

MCQs, SEQs, OSPE are modified by the professor periodically and then included in the question bank- an ongoing process.

Faculty Involvement:

- i. Lectures (Professor, Assistant. Professor)
- ii. Practical (Professor, Assistant Prof., Demonstrators)
- iii. Small group Discussion (Professor, Assistant Professor)
- iv. Tutorials (Professor & teaching staff)

- v. Field Trips (Professor)
- vi. Assignments (Professor)
- vii. Seminars (Professor)
- viii. Remedial classes (Professor/ Assistant Prof.)

Strategies for Weak Students:

- i. PTM (Parents'-Teacher Meeting)
- ii. Small batches under the supervision of Professor/ Assistant Professor
- iii. Active discussion
- iv. Assessment
- v. Problem solving and assignments
- vi. Individual assessment and counselling

Student Involvement:

- i. 'Open door policy' for students to redress their problems, academic or otherwise
- ii. Museum and laboratory facilities for students
- iii. Student presentations
- iv. Peer-assisted Learning (PAL)

Content and Learning Objectives

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Sr. No	SECTION	FACILITATOR	ASSESSMENT
1	<p><u>AUTOPSY AND EXHUMATION</u></p> <p>By the end of the module, students should be able to:</p> <p>Define Autopsy and Exhumation, its Types, Objectives, Principles, Rules, Techniques</p> <ul style="list-style-type: none"> • Perform Autopsy incision on dummy • Describe Autopsy protocol. • List & Describe essentials of autopsy suite & medico legal clinic • Identify & Explain risks and hazards of autopsy • Identify & Explain autopsy artifacts and negative autopsy • Interpret findings of autopsy on decomposed bodies, fragmentary & skeletal remains • Observe and Identify common procedures during his autopsy rotation • Interpret External & internal autopsy findings • Collect, Preserve & Dispatch samples for ancillary investigation 	Prof. Aamir Bashir	One

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THANATOLOGY

By the end of the module students should be able to:

- **Define, classify, diagnose and explain** death and its medico legal significance.
- **Explain** concept of Brain and Brainstem death and its medico legal aspects.
- **Explain** Medico legal aspects of sudden and unexpected death.
- **Certify** cause of death according to World Health Organization (WHO) guidelines.
- **Explain** physico-chemical changes in body after death and factors modifying these changes and relation of these changes with the time scale after death.
- **Explain** Cause, Mechanism, Mode and Manner of death.
- **Estimate** POST MORTEM INTERVAL (PMI) by various methods
- **Differentiate** between postmortem staining and bruising, hypostasis and congestion, rigor mortis and cadaveric spasm, rigor mortis and other simulating conditions.
- **Interpret** Death Certificate
- **Conceptualize and Describe** various medico-legal systems of Death investigation
- **Explain** EUTHANASIA and its types
- **Understand and Apply** " Transplantation of Organs and Tissues" Act (2007)

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Two

	<ul style="list-style-type: none"> • Explain Medical record-keeping & its medico-legal significance 		
3	<p><u>PERSONAL IDENTITY</u></p> <p>By the end of the module students should be able to:</p> <ul style="list-style-type: none"> • Define Personal Identity • Describe parameters of personal identity. • Explain various methods of identification. • Describe and Establish Identity of decomposed, mutilated bodies, fragmentary and skeletal remains. • Describe and Establish role of Teeth in identification and their medico legal importance. • Describe and Establish role of Radiology in identification and its medico legal importance. • Describe and Establish role of Osteology in identification and its medico legal importance. • Describe and Establish role of the special identification techniques and recent developments in DNA Testing, Forensic Photography, Osteometry, Finger Prints, Retinal Imaging, Lip Prints and other esoteric techniques 	Prof. Aamir Bashir	Three

5	<p><u>TRAUMATOLOGY</u> By the end of the module students should be able to:</p> <ul style="list-style-type: none"> • Define Injury, wound and hurt. • Classify injuries. • Explain mechanics of wound production. • Explain Mechanism of production of medico-legal injuries according to type of weapon • Recognize cause-effect relationship in mechanical injuries. • Describe medico legal aspects of mechanical injuries (cause or weapon/time/manner of infliction) • Describe Patho-physiological effects of the injuries. • Determine age of Injury. • Determine nature of injuries whether ante-mortem / post-mortem (Vital Reaction) • Describe relationship of trauma to the disease. • Interpret the pattern of injuries in simulated conditions and on real patients and Certify them (MLC) 	Prof. Aamir Bashir	Four
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<p>6</p>	<p><u>LAWS RELEVANT TO MEDICINE</u></p> <p>By the end of the module students should be able to:</p> <ol style="list-style-type: none"> 1. Define legal terms and explain procedures in the courts of law and evidence in the Court 2. Differentiate between Common Law, Statute Law, Criminal Law, Civil Law 3. Describe proceedings of Courts of Law, their powers and jurisdictions. 4. Explain and Demonstrate legal Procedures (court etiquettes), Evidence, Types of evidence, Admissibility of evidence, Deposition, Declaration, Stages of evidence. 5. Explain general Presumptions in Law, General Exceptions in Law, Unfit to plead, Diminished responsibility, Mc Naughton ' s Rule, Durham Rule, Feigned insanity, Mental Health Act 2001, Psycho-pathology of violence, its Predictors and Assessment 6. Explain <p><u>LEGAL ASPECTS OF MEDICAL PRACTICE</u></p> <ul style="list-style-type: none"> • Allopathic System, Alternative Medicine • Medical and Dental Degree Ordinance 1980, • Allopathic System (Prevention of misuse) Act 1962, 	<p style="text-align: center;">Prof. Aamir Bashir</p>	<p style="text-align: center;">Six</p>
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	<ul style="list-style-type: none">• PMDC Ordinance (Amended 2013) - Medical Register, Functions, Obligations/ Privileges, Lists, Procedures of registration• Relevant sections of Drug Act 1976• Dangerous drug act 1930.• Mental Health Ordinance 2001• Role and Types of Consent, and consent in vulnerable Population (Minors, Prisoners, Insane and others)• Medical Negligence and its types, Legal status, Doctor as a defendant in court of law• Professional Misconduct and its types• Professional Secrecy (Qualified & Absolute) • Concept of various Medical Documents (Four types)• 1. Existing criminal laws relating to:<ul style="list-style-type: none">○ Hurt (Criminal amendment Act 1997/ Qisas and Diyat Act); its definition, classification and medico- legal aspects.○ Killings: QATL: Its definition, classification and interpretation in relation to medico legal aspects.○ Sexual Assaults: Women protection Act 2006/ Hudood Ordinance 1979		
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	<p>2. Laws related to Marriage and its dissolution</p> <p>3. Workman Compensation Act.</p> <p>4. Social Security Act</p>		
7	<p><u>MEDICAL ETHICS</u></p> <p>By the end of the module students should be able to:</p> <ul style="list-style-type: none"> • Comprehend PM&DC Code of Ethics • Interpret and Analyze Medical Ethics and its tenets • Know Ethics- Declarations of Geneva, Helsinki and related • Understand Research Ethics- Principles, ERB/ IRB, Plagiarism 	<p>Prof. Aamir Bashir</p>	<p>Three</p>

<p>8</p>	<p><u>FIREARM / BLAST INJURIES</u></p> <p>By the end of the module students should be able to:</p> <ul style="list-style-type: none"> • Define Firearms • Define Ballistics. • Explain the basics of Ballistics (Interior, Exterior and Terminal ballistics). • Describe effects of firearms' injury on the body and its Medico legal aspects. • Explain Mechanics of blast injuries. • Recognize effects of blast injuries; DIRTY BOMB • Describe Medico legal aspects of blast injuries • Identify gun powders and ammunition used • Interpret findings of injuries produced by different weapons • Identify pattern/ characteristics of entry and exit wound • MLC of Firearms Injury 	<p style="text-align: center;">Prof. Aamir Bashir</p>	<p style="text-align: center;">Four</p>
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9	<p><u>Transportation/ Regional Injuries</u></p> <p>By the end of the module students should be able to:</p> <ul style="list-style-type: none">• Explain Motor vehicle ordinance 1965 (Relevant sections - Medical examination)• Classify: Road traffic/Railway traffic/Air crash accidents• Recognize and Interpret injuries to the driver/ pilot/passengers/pedestrians• Interpret features of special trauma such as Custodial torture and death.• Interpret and Explain trauma to Cranium and its contents & Spine and its contents and their Biomechanics	Prof. Aamir Bashir	Seven
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10	<p><u>ASPHYXIA</u></p> <p>By the end of the module students should be able to:</p> <ul style="list-style-type: none">• Define & Classify Asphyxia.• Differentiate & Explain Mechanical Asphyxia and its cause-effect relationship: Suffocation, Smothering, Gagging, Hanging, Strangulation, Throttling, Choking, Traumatic Asphyxia, Autoerotic Asphyxia.• Interpret & Explain Death due to Drowning: its recognition, mechanism, diagnosis and medico legal aspects.• Recognize each type of mechanical asphyxia by observing non - specific and specific findings and Explain its medico legal significance. <p>Explain Environmental Asphyxia: Recognition by autopsy findings and medico legal aspects.</p>	Prof. Aamir Bashir	Five
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11	<p><u>Accidents in Home & Environment</u></p> <p>By the end of the module students should be able to:</p> <ul style="list-style-type: none">• Define & classify thermal injuries.• Explain Injuries due to change in temperature: Various types of burns & their recognition in living and dead.• Explain mechanism of death due to Electrocutation and Lightning and its patho-physiology• Explain Radiation burns• Explain Medico legal aspects of thermal injuries• Interpret & Explain mechanism of Starvation and its patho-physiology in living & dead	Prof. Aamir Bashir	Seven
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Sexual Offences, Related Issues and Forensic Paediatrics

By the end of the module students should be able to:

- **Define & Explain** puberty, Impotence, Sterility, Virginity, Pregnancy and Delivery- Related Laws
- **Perform** examination, certification and handle medico-legal cases)
- **Define & Interpret** Abortion (Therapeutic & Criminal)
- **Explain** Methods of inducing criminal abortion
- **Observe and Describe** Examination in living & dead and medico legal issues of new born (still born/dead born/live born, if live born then cause of death, age of new born and others)
- **Recognize & Classify** sexual perversions: and explain their medico legal significance
- **Collect, preserve and dispatch** specimens in cases of sexual assaults
- **Explain, Perform** Medico-legal examination of a victim of an assault **& Certify**
- **Explain and Perform** Medico-legal examination of the alleged accused of rape **& Certify**
- **Explain and Perform** Medico-legal examination in unnatural sexual offence **& Certify**

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	<ul style="list-style-type: none">• Interpret & Explain findings of Infanticide and criminal/non-accidental violence or to new born, infant or child; Sudden Infant Death Syndrome (SIDS)• Interpret Psycho-pathology of assailant• Interpret Psycho-pathology of victim• Undertake initial management & referral of victim		
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FORENSIC TOXICOLOGY

1. GENERAL TOXICOLOGY

By the end of the module students should be able to:

- **Define** and **classify** poisons
- **Describe** different routes of absorption, metabolism, and excretion of poisons i.e., the role of various factors influencing poisoning in humans
- **Diagnose** poisoning in living & dead
- **Manage** case of poisoning.
- **Use** antidotes
- **Explain** the duties of medico legal officer to deal with a case of poisoning.
- **Interpret & Explain** chronic industrial poisoning, its assessment and compensation
- **Apply** the concept of collection, preservation, storage and transportation of biological material for toxicology analysis.
- **Identify** poison from clinical findings
- **Identify** poison by using all analytical technique.
- **Interpret** related Laws.

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Three

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2. SPECIAL TOXICOLOGY

By the end of the module students should be able to:

Diagnose, interpret & manage poisoning in living and dead, **Narrate** the Usual fatal dose and fatal period and **Interpret** the medico-legal significance of each of the poison listed below.

- 1. MINERAL (INORGANIC) ACIDS:** Sulfuric, Hydrochloric, Nitric, Hydrofluoric
- 2. ORGANIC ACIDS:** Acetic, Carbolic, Oxalic
- 3. ALKALIES:** Sodium Hydroxide, Hydrogen Peroxide
- 4. NON-METALLIC IRRITANTS:** Phosphorus, Aluminum Phosphide
- 4. HALOGENS:** Chlorine, Fluorine
- 5. HEAVY METALS:** Arsenic, Lead, Mercury, Thallium
- 6. IRRITANT PLANTS:** Dumbcane, Castor, Colocynth, Croton, Marking Nut, Capsicum
- 7. HEPATO_TOXIC PLANTS:** Neem
- 8. VENOMOUS ANIMALS:** Snakes and snake bite, Insects, Arachnids
- 9. SOMNIFEROUS:** Opium and allied
- 10. INEBRIENTS:** Alcohols, Benzodiazepines, Chloral Hydrate
- 11. DELIRIANTS:** Dhatura, Cannabis
- 12. STIMULANTS:** Amphetamines, Cocaine
- 13. DRUGS:** Anti-convulsant, Inhalational Anesthetics, Anti-depressants, LSD, Glue-sniffing, Paracetamol, Salicylates, NSAIDs, Anti-Histamines, Utero-tonics,
- 14. SPINAL/ PERIPHERAL:** Strychnine, Hemlock, Curare

Prof. Dr. Aamir Bashir, Dr. Roman Ashraf

15. HYDROCARBONS AND PESTICIDES: 16. FOOD POISONS: Microbial, Fish, Chemicals 17. RADIATIONS 18. DEPENDENCE & ABUSE: Tobacco and others, Physical and Psychological Dependence		
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Assessment Methodology

- i. SEQs
- ii. MCQs
- iii. OSPE
- iv. Viva Voce
- v. Assignment

Formative & Summative Assessment Rules

As per guidelines from UHS and institutional policies

Feedback

(From Students)

- i. Three - quarterly, written (Structured, as well as open-ended)
- ii. Regular fortnightly (teaching and lab staff)
- iii. Personal Tutorial Sessions (PTS)
- iv. Verbal – continuously, throughout the session
- v. Of examinations – Two, written

(To Students)

- i. Results of tests, mid-term and send-up
- ii. Discussion on tests and results – Group and Individual

Learning Resources

1. **Simpson's Forensic Medicine by Barnard Knight**, 11th Ed., Edward Arnold, London.
2. **Forensic Medicine and Toxicology** by C.K. Parikh, 8th Ed., CBS Publisher.
3. **Principles and Practice of Forensic Medicine** by Prof. Nasib R. Awan.
5. **Medical Jurisprudence and Toxicology** by Dr. Siddique Hussain.
6. **World wide web**

Rules and Regulations

The students are expected to observe the following in letter and spirit. Violating these regulations will result in fine, rustication, expulsion, ineligibility or any other punitive measure as deemed necessary by college administration.

1. As per UHS regulations, a minimum of 75% attendance and good moral character are mandatory to sit the examinations. In addition, LM&DC requires at least 50% performance (overall) from a student to be eligible for end-year examinations.
2. Ragging is strictly prohibited. Anyone found guilty will be imposed with a heavy fine and other disciplinary actions including rustication/ expulsion from college/ hostel.
3. The students should wear white coat and their I.D tags all the time during academic hours.
4. Roaming in college premises is prohibited.
5. The appearance and dress code of students must be in accordance with the accepted social norms and dignity of profession. The following are not allowed.
 - i. Extreme hair styles
 - ii. Revealing clothes
 - iii. Visible body part
 - iv. Body and face jewelry (except small ear studs, necklace and simple ring)
 - v. Untidy dress
 - vi. Slippers
6. Pasting/ hanging posters, graffiti and promotion material of any kind is prohibited.
7. Any type of political activity, demonstration, protest and procession are strictly prohibited. Offenders/ abettors will be expelled from college.

8. Any damage whatsoever caused by student will be recovered/ repaired 'as per actual' from him/ her. A fine may also be imposed.
9. All students must provide their and parents'/guardians' correct mailing address(es), phone numbers and emails. Any falsification in this regard will be considered as breach of discipline and any loss to college consequently, will be recovered from student in addition to fine.
10. Alcohol, drugs of abuse and arms of any and all types are strictly prohibited. Offender will be expelled from college.
11. Falsification/ abuse of college record/ data shall be considered as a serious offence, resulting in strict disciplinary action.
12. Any misconduct/ negligence on the part of student which endangers the life, health and safety of other students and/ or staff or brings disrepute to college shall be considered as a serious offence and will be punished accordingly.
13. Impersonation for any academic, financial or otherwise gain shall be considered a serious offence and will be punished accordingly.
14. Theft and fraud will bring severe punitive action on offender.
15. Any intimidation/ harassment on the grounds of age, gender, race, disability or religious belief shall result in expulsion from college.
16. The premises are strictly 'NO SMOKING ZONE'. Any non-compliance in this regard will result in fine of Rs.1000/- and warning. The parents will also be intimated. On next violation, rustication of student will result. Third violation will result in expulsion from college.
17. Any kind of unauthorized press conference, interview, writing articles etc. in media (print and electronic) shall be seriously punished.
18. Parking of vehicles of students inside premises is not allowed.

Format of University Examinations

1. Theory Paper

- a. MCQs 45 (One mark each) 45 marks
- b. SEQs 09 (Five marks each) 45 marks
- c. Internal Assessment 10 marks

2. Practical/ OSPE

- a. OSPE 10 stations (Four marks each) 40 marks
- b. Internal Examiner 20 marks
- c. External Examiner 20 marks
- d. Practical Copy 10 marks
- e. Internal Assessment 10 marks

3. TOTAL ----- 200 marks

Allocated Teaching Hours

As per PM&DC criteria.

Time Table

Annexed.

Proposed time Table- Third Prof. MBBS

Session 2023

Day & Time	8:00 – 8:45	8:45 – 9:30	9:30 – 9:45	9:45 – 11:45	11:45 – 12:00	12:00 to 12:15 P.M.	12:15 P.M. to 1:00 P.M.	1:00 P.M. to 02:30 P.M.	
Monday	Grand Tutorial, 1 st week - Pharmacology 2 nd week – Community Medicine 3 rd week - Pathology 4 th week - Clinical Pharmacology		Travel To GTTH	Clinical wards	Travel To LM&DC	BREAK	Forensic Medicine	Pathology Pharmacology Forensic Medicine Clinical Pathology Clinical Pharmacology	
Tuesday	Pathology	Pharmacology		Clinical wards			*Behavioral Sciences/Pharmacology	Pathology Pharmacology Forensic Medicine Clinical Pathology Clinical Pharmacology	
Wednesday	Pharmacology	Pathology		Clinical wards/ Skills Lab (for one batch)			Forensic Medicine	Pathology Pharmacology Forensic Medicine Clinical Pathology Clinical Pharmacology	
Thursday	Forensic Medicine	Pharmacology	9:30 – 10:15	10:15 - 10:30 AM	10:30 AM. to 11:15 AM	11:15 AM. to 12:00 Noon	12:00 Noon to 12:45 PM	12:45 PM. to 1:00 PM	Pathology Pharmacology Forensic Medicine Clinical Pathology Clinical Pharmacology
			Eye	BREAK	Pathology	Pharma	Community medicine	BREAK	Clinical Pathology Clinical Pharmacology
Friday	Pharmacology	8.45 – 9.15 AM	9:15 – 10:00 AM		10:00 to 10:45 AM	10:45 to 11:30 AM		11:30 to 1:00 PM	Pathology Pharmacology Forensic Medicine Clinical Pathology Clinical Pharmacology
		Pharmacology	ENT		Pathology	*Medicine/Surgery		Forensic Medicine Clinical Pathology Clinical Pharmacology	

Venue: - Lecture Theatre No. 3

Counselling (Career & Psychological)

Professor Dr. Aamir Bashir (HoD) guides the Student about how to learn, improving memory and their career choices. In addition, he counsels them for their psychological issues, motivates them to lead a meaningful life and be a life-long learner.

Prof. Aamir Bashir