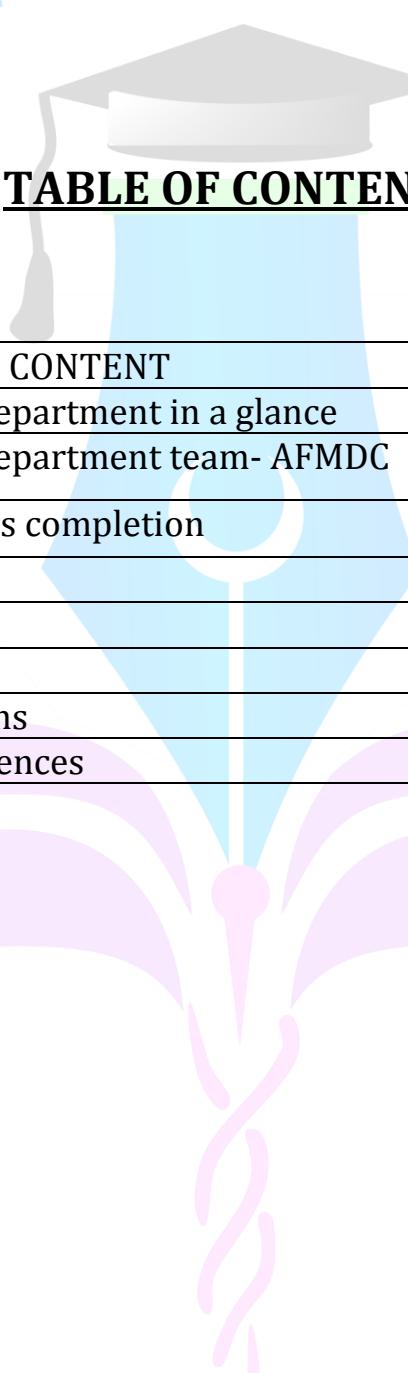


**STUDY GUIDE**  
**3<sup>rd</sup> YEAR**  
**FORENSIC MEDICINE**



**STUDY GUIDE**  
**FORENSIC MEDICINE**



## **TABLE OF CONTENTS**

CONTENT		Page No.
1	Forensic Medicine department in a glance	3
2	Forensic Medicine department team- AFMDC	4
3	Time line for syllabus completion	5
4	Time table	6
5	Learning objectives	7
6	Marks Distribution	23
7	Table of specifications	24
8	Textbooks and references	25

## **FORENSIC MEDICINE DEPARTMENT IN A GLANCE**

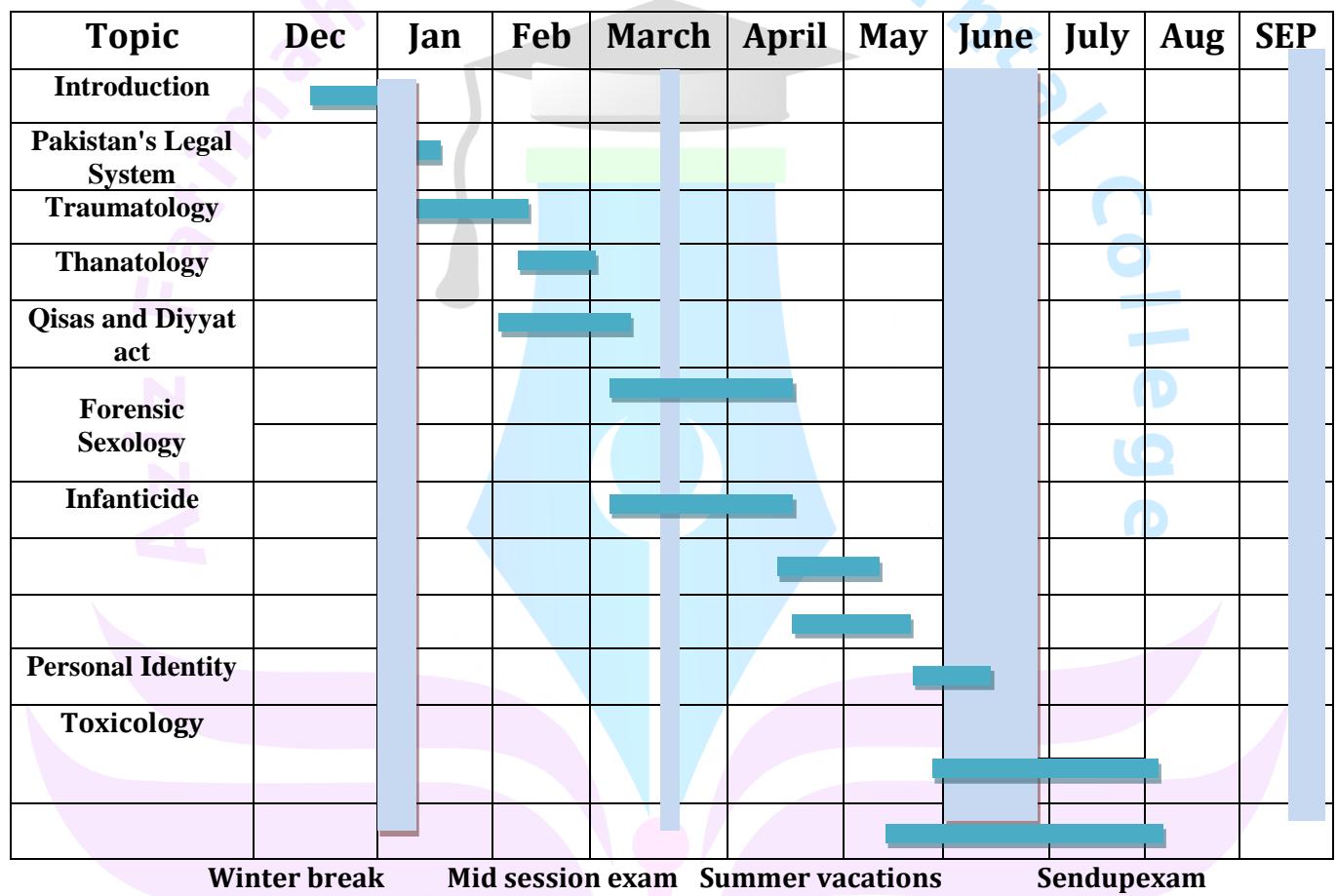
The Department has a well equipped lecture theatre, forensic lab and a forensic museum. The lab consists of serology test facilities. It also has glassware, chemicals and analytical equipment for the purpose of toxicology teachings. The forensic lab is fully equipped with latest apparatuses, multimedia and computers, good artistic models, flexes, weapons, crime scene posters and medicolegal photographs. There are many poison specimens in the museum. This whole arrangement is meant for giving latest scientific knowledge to the medical students and they are being trained for autopsy, medico legal work and other aspects of the subject. The department has an air conditioned lecture theatre, an air conditioned forensic laboratory, forensic museum and demonstration/tutorial rooms. Forensic medicine brings the investigative capabilities of modern medicine to the aid of law and justice. Students have an opportunity to apply knowledge of the various sciences to the human body. Students are taught about different aspects of forensic medicine. The faculty members keep themselves updated of latest developments in the international scene. Teaching of medical students is made by general lectures, demonstrations and tutorials making use of multimedia, computers, models, specimens, microscopes. This department is also affiliated with forensic department of Punjab Medical College Faisalabad for learning of autopsy/ medicolegal work. Third year MBBS class students visit mortuary and medicolegal clinic of Faisalabad Medical University (FMU) and practically see the dead bodies and autopsy work being done. This is meant for training the medical students in forensic work appropriately. This department comprises of trained and skilled teaching faculty along with trained lab staff.

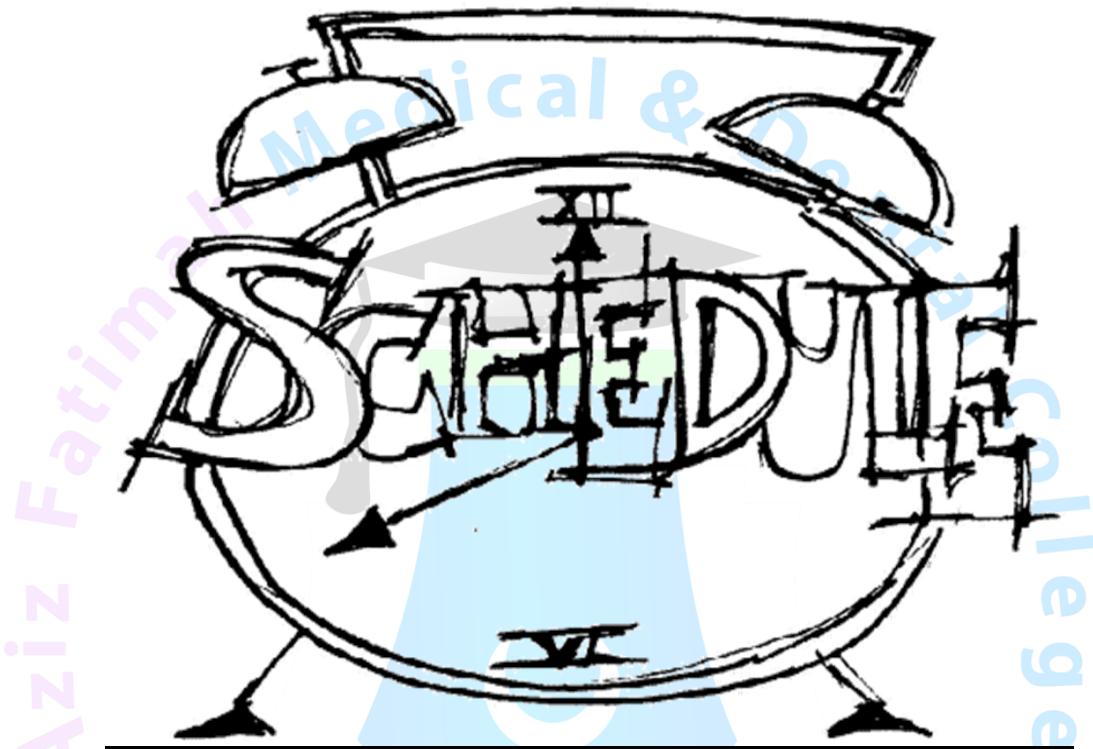
## **Forensic Medicine Department Team- AFMDC**

<b>Positions</b>	<b>Name</b>
Head Of Department	Dr. Anwar Saud Saqib
Demonstrator	Dr. Shahid Amin
Computer Operator	Shahzaib Anwar
Lecture Hall Attendant	Muhammad Zeeshan Irshad
Laboratory Attendant	Muhammad Qais

## TIME LINE for SYLLABUS COMPLETION

### GANTT CHART of 3<sup>rd</sup> YEAR LECTURES





## TIME TABLE

Date	1 08:00-08:45	2 08:45-09:30	3 09:30-10:15	4 10:15-11:00	5 11:00-01:00	6 01:00-01:30	7 01:30-03:00
Monday			Lecture		Practical		Practical
Tuesday				Lecture			Practical
Wednesday							Tutorial
Thursday		Lecture					
Friday			Lecture		Tutorial		

# LEARNING OBJECTIVES OF FORENSIC MEDICINE

**3<sup>RD</sup> YEAR M.B.B.S**

Topic	Sub topic	Learning Objectives
Welcome to new class	<b>Introduction to Forensic Medicine</b>	Define forensic medicine Enlist the branches of forensic medicine Discuss role of forensic medicine in MBBS
		Define Toxicology Discuss general aspects of toxicology
		Enlist various branches of forensic medicine Describe role /links of various branches in forensic medicine
	<b>Introduction to Law</b>	Define legal procedures n forensic medicine Enlist legal procedures Analyze role of legal procedures in forensic medicine
		Define Law Enlist Examples of Law in Medicine Classify law ( civil /criminal law) Compare various kinds of laws
		Classify courts Describe powers given to various courts Visit to the court Describe working of court Describe a court map Define Evidence
	<b>Evidence</b>	Classify Evidence Describe Direct evidence  Discuss indirect evidence with case scenarios
		Describe Circumstantial Evidence with case scenarios Describe dying declaration Describe dying deposition
		Describe role of medical doctor in the medicolegal system
	<b>Witness</b>	Define witness Enlist types of witness
		Describe different medicolegal systems for injuries ,hurts and deaths in the world
	<b>Medicolegal systems</b>	Describe modified continental system in Pakistan

	<b>Stages of Evidence</b>	Describe police inquest ,coroner's inquest and magistrate inquest
		Describe protocol for recording of evidence in court
		Describe examination in chief ,cross examination, re-examination
<b>Procedure for calling in the court</b>	Describe Sumons	
	Describe Subponeoa	
	Describe Warrant	
	Describe Conduct Money	
<b>Criminal Justice</b>	Describe general presumptions of law	
	Describe general exceptions? Not clear.....	
<b>Criminal responsibility</b>	Define criminal responsibility	
	Describe factors which can negate criminal responsibility	
	Describe MC naughtens rule	
	Define following	
	Oath ,injury ,assault, affidavit ,unfit to plead ,guilty but insane ,deposition ,testimony	
	Conduct money ,borstal jail ,cognizable and non cognizable offence ,crime ,offence	
	Describe principles for giving evidence in court	
	Describe role of Forensic Medicine in Crime Detection	
<b>PM&amp;DC</b>	Enlist the functions of PM&DC	
	Describe the functions of PM&DC	
<b>RMP</b>	Enlist and explain the privileges of RMP	
	Enlist and explain the obligations of RMP	
<b>Medical Ethics</b>	Define and explain medical ethics ,professional misconduct ,infamous conduct	
	Describe medical ethics ,professional misconduct ,infamous conduct	
<b>Medical Negligence</b>	Enlist/Describe abuses of RMPs	
<b>Abuses of RMPs</b>	Describe the procedure for grant of registration for Medical Graduates	
	Describe the procedure for disciplinary proceedings against an RMP	
<b>Drug Acts</b>	Enlist the objectives of drug 1976	
	Enlist the objectives of Dangerous drug act 1930	
	Define Drug addiction	
	Discuss drug addiction	
	Define Drug dependence	

		Discuss Drug dependence
		Define Drug abuse
		Enlist Dangerous Drug Rules 8,13,14
		Enlist the objectives of Dangerous drug rules 8, 13,14
		Define temporary reception ,voluntary reception ,reception order
<b>Treatment of mental illness</b>		Describe temporary reception ,voluntary reception ,reception order
		Describe procedure for discharge of mentally ill person from mental asylum
		Define Consent
<b>Consent</b>		Classify Consent
		Describe implied consent, informed consent ,expressed consent
		Compare implied consent, informed consent ,expressed consent
		Describe blanket consent,
		Describe consent recoding procedure
		Describe standard procedure ,modified of procedure ,with holding of consent
		Describe consent for organ transplantation,
		Describe the legal position of AIH
		Describe pros and cons of organ transplantation.
		Evaluate a personal view of artificial insemination
		Describe moral view of therapeutic abortion
		describe moral view of euthanasia
		Describe relationship between biomedical research and highest ethical standards
<b>Medical Negligence</b>		Define Medical negligence
		Classify Medical Negligence
		Define civil negligence
		Describe civil negligence
		Define criminal negligence
		Describe criminal negligence
		Define contributory negligence
		Describe contributory negligence
		Describe third party negligence
		Describe res ipsa loquitur
		Describe Professional Secrecy
		Define Privileged Communications
		Enlist Privileged Communications and explain ( absolute privilege ,qualified privilege ,disclosure of secrets of patient)

<b>Traumatology</b>	<b>Wound Production</b>	Define wound
		Enlist types of bruises
		Describe mechanism of wound production
		Define mechanical Injuries
		Classify mechanical Injuries
		Enlist factors affecting would production
		Enlist types of weapons
		Classify abrasions
	<b>Bruises</b>	Describe mechanism of production of abrasions
		Describe types of bruises
		Describe mechanism of production of bruises
		Define laceration
		Enlist types of lacerations
	<b>Mechanical Injuries</b>	Describe types of lacerations
		Describe features of incised wound
		Describe penetrating wound
		Describe perforating wound
		Describe stab wounds
		Describe regional injuries
		Differentiate between fabricated injuries and true injuries
		Identify types of abrasions on model
		Identify types of bruises on model
		Identify types of laceration on model
		Identify incised wound on model
		Identify stab wound on model
		Identify penetrating wound
		Identify perforating wound

	Define transportation injuries( road traffic injuries)
	Describe transportation injuries (road traffic injuries )
	Evaluate medicolegal importance of different injuries
	Describe complications of wounds
	Describe complications of injuries
	Describe crush syndrome
	Describe injuries caused in police torture
	Identify transportation injuries model
	Identify wound complications on model
	Enumerate methods of treatment of mechanical injuries
	Apply appropriate method of treatment in various mechanical injuries
	Describe method of stitching of superficial wound
	Describe medicolegal aspects of heat injuries
	Describe medicolegal aspects of cold injuries
	Describe medicolegal aspects of electrical injuries
	Observe examination protocol in medicolegal cases
	Observe nature of hurts ?
	Define firearm weapon
	Enlist different types of weapons, identify different types of weapons
	identify different types of firearm projectiles
	Describe different types of firearm bullets
	Describe different types of firearm pellets
<b>Firearm Injuries</b>	Enlist various types of Ballistics
	Describe Internal ballistics

	<p>Describe External ballistics</p> <p>Describe Terminal ballistics</p> <p>Define Entry wound</p> <p>Define Exit Wound</p> <p>Describe mechanism of firearm entry wound</p> <p>Describe mechanism of firearm exit wound</p> <p>Describe feature of firearm entry wound</p> <p>Describe features of firearm exit wound</p> <p>Identify entry wound on model</p> <p>Identify exit wound on model</p> <p>Differentiate between firearm entry and exit wound</p> <p>Describe firearm blackening around entry wound</p> <p>Describe tattooing around entry wound</p> <p>Describe collar of abrasion around entry wound</p> <p>Analyzing distance and direction of fire</p> <p>Enlist factors affecting diameter, size, shape of firearm entry wound</p> <p>Categorize firearm injuries by different types of firearm weapons</p> <p>Describe Tail wag phenomenon</p> <p>Describe bullet Yaw</p> <p>Describe trajectory of the bullet</p> <p>Describe tumbling of the bullet</p> <p>Describe ricocheting Phenomenon</p>
<b>Effects of heat ,cold ,electricity on human body</b>	<p>Describe complications of excessive heat ( burns)</p> <p>Describe types of burns</p> <p>Describe rule of nine for percentage of burns</p> <p>Describe medicolegal examination protocol of case of burns</p> <p>Describe effects of excessive heat on human body</p>

<b>Thanatology</b>		Describe complications of cold on humans ,autopsy findings
		Describe effects of electrocution
		<b>Lightening</b> Describe effects of lightning
	<b>Starvation</b>	Describe complications of starvation on humanans
		Describe features of starvation on dead body (autopsy findings)
	<b>Death</b>	Describe scientific concept of death
		Enlist indicators of death
		Enumerate the WHO criteria for diagnosis of death
		Define brain death
		Describe brain death
		Define vegetative state
		Describe vegetative state
		Enlist causes of sudden death
		Enlist causes of unexpected death
		Define the terms, cause, manner and mode of death
		Describe early physiological changes after death
		Describe late physiological changes after death
		Describe death on police custody
		Fill a proforma of Certificate of Death according to WHO guidelines
		Diagnose suicidal death
		Diagnose Homicidal death
		Diagnose accidental death
		Describe early and late changes after death
<b>Asphyxia</b>		Define asphyxia
		Classify asphyxia
		Describe features seen on body due to mechanical ashyxia
		Describe features seen on body due to chemical ashyxia

		Describe features seen on body due to environmental 1 asphyxia
		Analyze medicolegal implications of violent asphyxia
		Explain mechanism of death due to drowning
		Describe features seen on body due to drowning
		Differentiate between antemortem and postmortem drowning
		Identify various forms of asphyxia on model
		Identify features of drowning on a model
	<b>Autopsy</b>	Define autopsy
		Enlist types of Autopsy
		Enlist objectives of autopsy
		Enlist rules regarding autopsy
		Describe the techniques used in autopsy
		Describe procedure of autopsy
		Define fatal period
		Describe methods for estimating time since death.
		Describe postmortem artefacts.
	<b>Drowning</b>	Describe fresh water drowning
		Describe salt water drowning
		Describe antemortem drowning
	<b>Infanticide</b>	Define infanticide
		Define live born ,still born ,dead born
		Describe features of live born ,still born and dead born
		Determination of age of embryo
		Determination of age of foetus
	<b>Starvation</b>	Describe effects of starvation on humans
	<b>Autopsy ,exhumation</b>	Describe the risks/hazards of autopsy
		Describe autopsy Protocol
		Define autopsy Index

		Define negative autopsy
		Enlist steps in sending viscera to a pathologist/chemical examiner
		Describe procedure for selecting viscera
		Describe procedure for preserving viscera
		Describe procedure for labeling viscera
		Describe procedure for dispatching viscera for sending to pathologist.
		Define exhumation
		Describe the procedure of exhumation
		Explain medicolegal importance of exhumation
		Enlist limitations of Exhumation
		Observe Autopsies
		Visit Site of Exhumation
	Hurt	Define Hurt
		Classify hurt
		Enlist examples of types of Hurt
		Define Qatal
		Enlist types of Qatal
		Describe types of Qatal with examples.
		Describe protocol of examination of medicolegal injuries
		Write MLC report
Qisas and Diyyat act	Virginity and Pregnancy and delivery	Define virginity
		Describe features of virginity
		Describe features of pregnancy
		Describe features of recent delivery
		Describe features of remote delivery
Forensic Sexology	Abortion	Define abortion
		Classify abortion
		Describe types of abortion
		Analyze the legal position of abortion in Pakistan
		Define criminal abortion
		Describe methods for procuring criminal abortion
		Describe features of criminal abortion

		Describe features of criminal abortion on a victim's body living and dead
		Describe protocol for writing sexual report
		Describe protocol for writing sexual fitness report
		Describe protocol for writing non fitness report
		Define sexual Perversions
		Enlist types of sexual perversions
		Describe sexual perversion
		Describe the causes of sexual perversions
<b>Sexual Offences( Zina and Hadoood Ordinance)</b>		Describe natural sexual offences
		Describe unnatural sexual offences
		Describe protocol of examination of victim of sexual offence
		Describe protocol of examination of assailant of sexual offence
		Describe collection of sample for sexual offense case
		Describe procedure for dispatching sample for sexual offense case
		Observe cases of Sexual offense
		Observe cases of male sexual potency
		Writing a sexual potency report
		define still born
		Define Dead born
		Define Infanticide
		Define Live born
		Define still born
		Describe features of virginity ,pregnancy ,and delivery
	<b>Infacnticide</b>	Describe features of recent delivery and remote delivery on living and dead
		Describe different types of abortion ,legal position of therapeutic abortion in Pakistan
		Define criminal abortion ,describe different methods for procuring criminal abortion

<b>Personal identity</b>		Define Dead born
		Describe methods to diagnose stillborn
		Describe methods to diagnose liveborn
		Describe methods to diagnose deadborn
		Describe hydrostatic test
		Enlist the limitations of hydrostatic tests
		Define Maceration
		Define Putrefaction
		Differentiate between maceration and putrefaction
		Describe procedure for sending aborted material to histopathologist for examination.
		Describe procedure to determine age of embryo
	<b>SIDS</b>	Describe SIDS
	<b>Battered baby syndrome</b>	Describe Battered baby syndrome
	<b>Battered wives</b>	Describe Battered wives
	<b>Introduction</b>	Define personal identity
	<b>Dactylography</b>	Describe parameters of personal identify.
		Enlist techniques of identification including using special techniques ,
		Describe identification of living ,dead ,decomposed ,mutilated and burnt bodies
		Analyze the role of dactylography in personal identity
	<b>Age Estimation</b>	Describe ages of medicolegal importance
		Describe age estimation parameters in humans
		Describe role of teeth on human age estimation
		Describe role of bones in age estimation

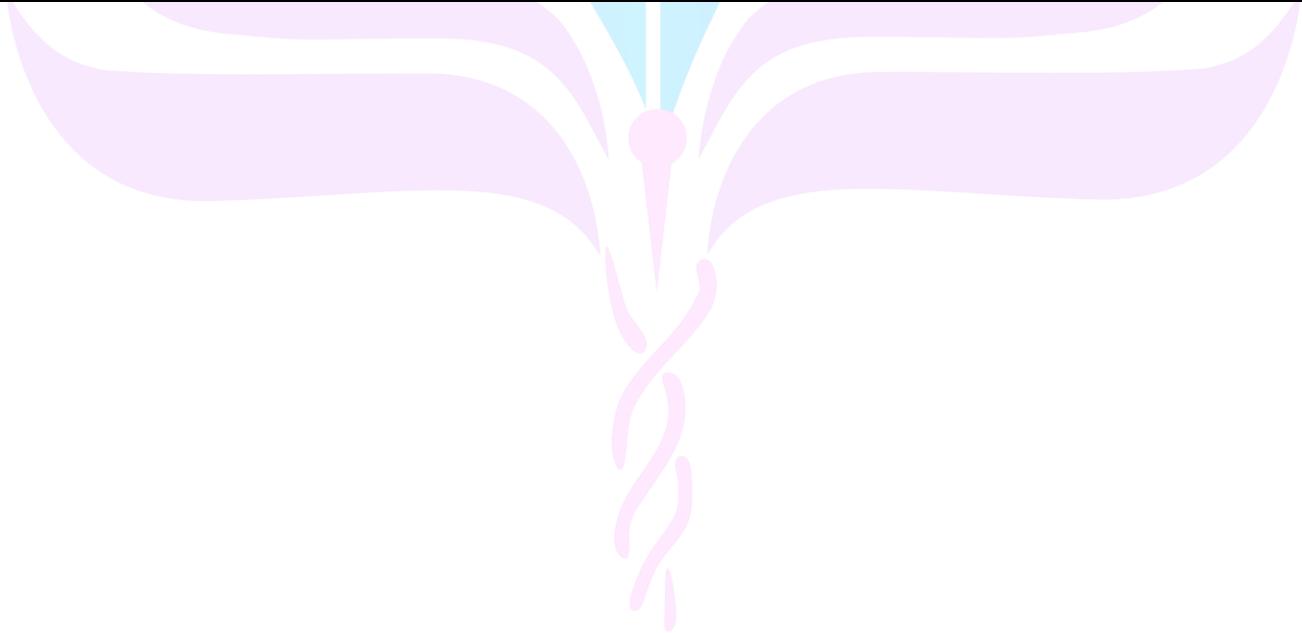
		Describe the information one can get from bones subjected for medicolegal examination.
		Describe role of human skull in age estimation
		Describe role of human mandible in age determination
<b>Sex Determination</b>		Describe parameters for sex determination
		Describe sex determination from male and female pelvis
		Describe sex determination from human skull
		Enlist differences in male and female skull
		Sex determination.
		Describe role of nuclear sexing ,baar bodies and drum stick
<b>Race determination</b>		Describe cephalic index ,its importance in race determination
		Describe nasal index ,sciatic notch index ,sacral index ,sternal index
<b>DNA role in identity</b>		Describe structure of human DNA
		Define DNA profiling
		Describe role of DNA profiling in personal identity
		Describe role of DNA profiling in identification of parents
		Describe role of DNA profiling in identification of criminals and assailants
<b>Human hair</b>		Describe structure of human hair
		Enlist the differences between human hair, animal hair and floth hair
		Describe role of human hair in personal identity and in criminology
		Describe role of human hair in criminology
<b>Trace evidence</b>		Define trace evidence
		Describe types of trace evidence
		Describe role trace evidence in forensic criminology
		Describe blood groups
		Describe forensic importance of human blood groups

<b>Aziz Fatin</b>		Describe Locard Exchange Principle
		Explain forensic importance of Locard Exchange Principle
		Describe collection of different samples for lab analysis applied in forensic practice
		Describe cases of disputed paternity and maternity
		Describe cases of disputed maternity
		Describe secretors
		Describe method of identification of biological specimen including human semen, human saliva, breath and urine
		Describe method of collection of above biological specimen
		Describe method of preservation of above biological specimen
	<b>Insanity</b>	Describe method of dispatch of above biological specimen
		Describe the laboratory tests to be performed on above biological specimen
		Describe parameters to diagnose mental illness
		Describe features of insanity
		Differentiate between true and feigned insanity
	<b>Biological Specimen</b>	Perform examination of blood slide
		Identify human RBC on slide
		Identify Animal RBC on slide
		Identify WBCs on slide
		Describe the life span of human RBCs
		Prepare a slide of human hair
		Prepare a slide of animal hair
		Prepare a slide of cloth fibres
		Identify human and animal hair
		Differentiate between human and animal hair.

		Observe the techniques of poison detection and histopathological examinations
		Describe scope of toxicology
		Enlist laws related to homicidal poisoning
		Enlist laws related to suicidal poisoning
		Enlist causes of drug dependence
		Describe the fate of poison in biological tissues
		Describe the process of detoxification of poison in biological tissues
		Describe parameters used to diagnose toxicological cases in acute and chronic exposure in living
		Describe parameters used to diagnose toxicological cases in acute and chronic exposure in dead.
		Classify poisons
		Describe factors affecting dosage of poisons
		Describe factors affecting toxicity of poisons on humans
		Describe methods of excretions of poisons from human body
		Define gastric lavage
		Describe procedure of gastric lavage
		Enlist indications for gastric lavage
		Enlist contra-indication for gastric lavage
		Enlist complications of gastric lavage
		Describe management of a in emergency of a hospital case of acute poisoning
		Enlist the steps for maintenance of vital systems of humans
		Describe duties of duty doctor in case of poisoning
		Describe protocol of preparation of chemical examiner report
	Gastric Lavage	Define antidotes
	Gastric Lavage	Classify Antidotes

		Describe the functions of antidotes
		Describe alcohol toxicity in humans
		Describe alcohol metabolism in humans
		Describe alcohol dosage in humans
		Describe alcohol excretion in humans
	<b>Antidotes</b>	Describe toxic effects of alcohol in humans
		Define antidotes
		Describe types of antidotes
		Describe mechanism of action of antidotes
	<b>Alcohol</b>	Describe alcohol toxicity in humans
	<b>Special Poisons</b>	Describe opiates, opeoids ,opium and heroin poisoning on human
		Describe management of opiates, opeoids ,opium and heroin poisoning
		Describe treatment of opiates, opeoids ,opium and heroin poisoning on human
		Describe salicylates poisoning
		Describe paracetamol poisoning
		Describe hypnotics poisoning
		Describe seditives poisoning
		Describe cocaine poisoning
		Describe dhatura poisoning
		Describe canabas toxicity
		Enlist
		Describe aconite ,belladonna, hyoscyamus, stramonium,digitails,ergot,mushrooms, nux vomica ,oleander ,tobacco.
		Describe inorganic elements poisoning including ,arsenic ,lead ,mercury ,phosphorus ,antimony ,thallium poisoning and management
		Describe management of inorganic elements poisoning.

		Describe insecticides poisoning rodenticides and management
		Describe management of insecticides poisoning
		Describe rodenticides poisoning
		Describe management of rodenticides poisoning
		Describe hallucinogenic drugs
		Describe deleriant poisons
		Describe the hydrocarbon poisoning ( kerosine iol,gasoline ,xylene,glue sniffing
		Describe poisonous insect toxicity
		Describe management of poisonous insect toxicity
		Describe snakes toxicity
		Describe management of snakes toxicity
	<b>Practical Work</b>	Preparation of toxicology note book
		Preparation of forensic note book
		Interpreting Xrays for trauma ,age estimation



## **Format (Practical Examination / OSPE)**

### **MBBS Second Professional**

#### ***FORENSIC MEDICINE AND TOXICOLOGY***

**Total OSPE Stations = 10**

<b>Non Observed</b>	<b>8 (80%)</b>
<b>Observed</b>	<b>2 (20%)</b>
<b>Station Duration</b>	<b>3.5 min</b>
<b>Allowed Marks</b>	<b>40</b>
<b>General Viva Voce</b>	<b>40</b>
	<b>20 (Internal)</b>
	<b>20 (External)</b>

**Non Observed Stations**      **4 marks each i.e.  $4 \times 8 = 32$**

**Observed Station**      **4 marks each i.e.  $4 \times 2 = 8$**

**Internal Assessment**      **10 marks**

**Yearly Workbook**      **10 marks**

**Total**      **100**

**SECOND PROFESSIONAL MBBS EXAMINATION**  
**FORENSIC MEDICINE & TOXICOLOGY**

**TABLE OF SPECIFICATIONS**

TOPIC	SEQ'S	MCQ'S
1. a) Pakistan's Legal System b) Law In Relation To Medical Man c) Forensic Psychiatry	1	5
2. THANATOLOGY	1	3
3. TRAUMATOLOGY a) General Traumatology b) Special Traumatology c) Firearm Injuries, d) Transportation Injuries e) Thermal Injuries f) Electrical Injuries g) Violent Deaths Due Asphyxia h) Drowning etc.	1	9
4. PERSONAL IDENTITY AND EXAMINATION OF BIOLOGICAL SPECIMEN (TRACE EVIDENCE)	1	5
5. AUTOPSY, EXHUMATION & FORENSIC SCIENCES	1	4
6. FORENSIC SEXOLOGY Sexual offenses, relevant section of law (Zina and Hudood and named miscarriage / abortion, Pregnancy, delivery, New born , Child Trauma Etc.	1	4
7. TOXICOLOGY a) GENERAL TOXICOLOGY b) SPECIAL TOXICOLOGY i. Alcohol ii. Opiates, Opioids and other narcotics iii. Salicylates and Paracetamol iv. Hypnotics Secatives v. Stimulants (cocaine) cannabis vi. Poisonous Plants (Aconite , Belladonna, Hyoscyamus, Stramonium , Digitalis, Ergot , Mushrooms , Nux, Vomica, Oleander Tobacco) vii. Venomous Insects (Snakes) viii. Inorganic Elements, Antimony, Arsenic Lead, Mercury, Phosphorus. ix. Volatile Poisons and corrosives (Carbon Monoxide, Carbolic Acid and Alkalies) x. Pesticides, Herbicides and Insecticides.	1 2 2 1 1 1 1 1 1 1 1 1	3 12

## **TEXTBOOKS AND REFERENCES**

1. Simpson's Forensic Medicine by Barnard Knight, 11<sup>th</sup> Ed. Edward Arnold, London.
2. Parikh's Text book of Medical Jurisprudence, Forensic Medicine and Toxicology by C.K. Parikh 6th Ed., CBS Publisher.
3. Buchanan's Text book of Forensic Medicine and Toxicology by Buchanan, 9<sup>th</sup> ed., Livingstone.
4. G. Principles and Practice of Forensic Medicine by Prof. Nasib R. Awan.
5. Medical Jurisprudence and Toxicology by Dr. Siddique Hussain.
6. Textbook of Forensic Medicine & Toxicology Krishan Vij (4<sup>th</sup> Edition)

Iziz Fatimah Medical & Dental College

Thank You