FORENSIC MEDICINE AND TOXICOLOGY

CURRICULAM OF SYLLABUS UNDER THE NEW REGULATIONS FOR THE MBBS.


3rd semester

No. Therotical Diadectic Lecture No. of lecture

1. INTRODUCTION

a) History of Forensic Medicine in India. 1(one)
b) Definition of Forensic Medicine.

Medical Ethics & Ethiquette etc.

C) Role of General duties doctor in elementray criminal Investigation in India and reporting of Medicolegal Cases- general over view about duties of doctors in Medicolegal cases.

2. LEGAL PROCEDURE

a) Inquests & its type & difference between them. 1(one)

Criminals courts of India & their powers.

b) Procedures of of giving Medical evidences in criminal courts type of evidence, Medical Certificates P.M. Reports. Dying declaration & deposition and other documents not subjected to oral evidence ordinarily. 1(one)

3. IDENTIFICATION
a) Definition, Medicolegal Importance, enumeration & overview of data for identification of subjects, 3(three) with special mention of determination of age & sex in living and dead (Discussion of individual data which will dealt in Practicle/Tutorial Classes i.e. from Bones, X-ray films etc.)

b) Outline of Dactylography, Hair, Blood, Advances in 3(three) Identification techniques namely blood grouping DNA Finger Prints super-imposition photography etc.

c) Medicolegal importance of hair & teeth Examination and different stains e.g. blood, seminal stains, and hazards 2(two) of Blood transfusion.

(Writing of report on Blood and Seminal fluid examination will be dealt with in Practical Tutorial)

4. DEATH & ITS MEDICOLEGAL IMPORTANCE

a) Definition, types & modes of death, suspended animation & its medicolegal importance, moment of death with special 2(two) reference to brain death & outline of Organ Transplantation Act, Certification of death clinically and donation of dead Bodies.

c) Signs of death (1) immediate, (2) Early, (3) Late e.g. eye changes, P.M. staining Rigor mortis and condition stimulating
putrefation adipocere mummification & their Medicological importance; General procedure of determination time passed since death from post mortem examination. 4(four)

5. INJURY & ITS MEDICOLEGAL IMPORTANCE

a) Definition, classification, medicolegal considerations and Relevant section of I.P.C. & P.C. 1(one)
b) General overview of different overviews (1) Abrasion, (2) Bruise, (3) Laceration, (4) Incised wounds and stab injuries and their Medicolegal importance. Difference between (1) P.M. staining and bruise (2) Lacerated and incised wound, (3) wound of entrance and exit of stab wound Individual injuries to be discussed in practical/tutorial) 5(five)
c) GUN SHOT INJURIES - With elementary ballistics. 3(three)

Types of firearms & categories- Rifled & Smooth bored weapons & related definition; study of gun shot injuries at different ranges including Involuntary tattooing & Tandem bullet & cartridge etc. & wound (Terminal) Ballistics. Difference between wound of entrance and exit caused by bullet.

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Total Lecture class in 3rd semester : 26(twenty-six)

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4th Semester:

1. REGIONAL INJURIES
a) Head injuries Different types of skull
Fractures Intracranial Haemorrhages Hol bourn's Mechanism of brain injuries, concussion, Lucid interval, Automatism, difference from alchol intoxication, Duties of a doctor in case of Head injury. 2(two)

b) Spinal Thorasic and abdominal injuries, Limb injuries including Railway injuries. Traffic & other vehicular injuries,
Aviation injuries, and its medicolegal importance 1(one)

**Thermal injuries & Starvation**

c) Effects of Cold Heat Burn, Scald, Lightening Electricity,
Xray Burns etc. Causes of death from burn , Classification of burn, difference between antemortem & Postmortem Burn,
Death from starvation, causes, signs & symptoms. 2(two)

d) Medicolegal aspects of wound, relevant section of I.P.C./Cr.P.C.
Difference between Antemortem and Postmortem Wound, Grievous Hurt, Criterias of Homicidal & Sucidal wound, determination of age of wound, causes of death from wound (Writing of Injury Report will be dealt with in Practical/Tutorial). 2(two)

2. Violent Asphyxial death- Definition, salient feature of Hanging, strangulation (Different types), suffocation (smothering, overlaying), Choking, Burking, etc. Drowning, Traumatic Asphyxia, sexual Asphyxia; Modes & Manners of death, fatal period, Postmortem
findings, Medicolegal consideration of each. 5(five)

3. Impotence, Sterility, Sterilisation, Artificial Insemination, Test Tube Baby Surrogate mother, Medicolegal importance of each them. 1(one)

4. Virginity, defloration-signs; Difference between true & false Virgin - Medicolegal importance. 1(one)

5. Classification of sex offence including definition & examples

Procedure of examination of accused victim of rape and other sex offences different relevant section of I.P.C. & relevant onsideration of sex preservations (Writing of Report on Sex offence will be dealt with Practical/ Tutorial classes). 3(three)

6. Medicolegal aspects of pregnancies, Delivery, recent & remote Signs of Delivery, Medicolegal problems of during of pregnancy, Superffoetation Superfoecundation, posthumas child, etc. Paternity determination, lrgitimacy. 2(two)

7. Abortion & its classification, MTP Act'71; Methods to procure abortion, its complication & medicolegal importance. 1(one)

8. Infanticide, Viability, still and dead born, signs of live And still birth and dead born; various tests & signs, Cot death, Battered baby syndrome. 2(two)

9. Forensic Psychiatry including varous definition
Difference between true and feigned insanity,
Restraining a lunatic, Civil & Criminal responsibilities of Insane, Somnambulism, Somnolemtia, hypnotism & outline of Mental Health Act. 2(two)

10. Medical Law & Ethics

Indian Medical Council & State Medical Council Function & Power, Professional conduct privilege & duties of Medical Practitioner & Malpractices E.S.I. Act, Workman compensation Act, Medical Indemnity Insurance, C.P. Act, Medical Records & Certificationj Consents, including informed consent, vicarious Liability, Medical negligence, Human experimentation, Euthanasia & Medicolegal aspects of AIDS, Torture/Atrocities on Human being 5(five)

11. Toxicology, General consideration of a poison, Classification, Diagnosis, General Management Antedotes, Medicolegal importance, factors modifying action of positions. 2(two)

12. Diagnosis of poisoning in living & dead, Duties of a Doctor in a case of poisoning. (Writing of Report on Poisoning will be dealt with in Practical Classes), Corrosive acids and Alkalies. 1(one)
5th Semester

INDIVIDUAL POISONS

1. Acute and chronic poisoning by Heavy Metallic Salts of Arsenic, Mercury, Copper, Zing, Lead, Alluminium, Phosphide Toxicity, Alcohol, Barbiturates, Aspirin. 5(five)

2. Dhatura, Opium, Cannabis, Kunch, Yellow olender, Aconite, Kuchila, Seal kanta, M.L.aspect of food poisoning. 3(three)

3. Industrial poisons, common agricultural & environmental poison, Aniline, M.C. 2(classes)

4. Death from Anaesthetic agents- use and abuse Drug Abuse And recent considerations. 1(one)

5. Medicolegal Autopsies

Protocal Procedure, preservation including embalming, Examination of mutilated bodies & bones (P.M.Demonstration and writing of P.M. reports will be dealt with in Practical). 1(one)

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Total Lecture Classes in F. M. T. =26(3rd) +32(4th) +12(5th)= 70 .

DEMONSTRATION/PRACTICAL CLASSES

3rd Semester

No. of classes
1. IDENTIFICATION

Examination of skeletal remains (namely skull, mandible, Pelvis, Femur, Sternum, Ribs etc.)

For determination of (A) Age, (B) Sex, (C) Race, (D) Stature. 3(three)

2. DETERMINATION OF AGE FROM X-RAY. 1(one)

3. INJURIES

A) Examination of weapons including fire arms & its corelation with injuries & Medicolegal Importance. 4(four)

B) Demonstration of injuries in emergency room and report Writing. 1(one)

4. Demonstration of Medicolegal Autopsies and writing of Reports 1(one)

Total Demonstration classes in 3rd Semester : 10(ten)

4th Semester.

1. Study of Medicolegal (M.L.) Photographs relating to Identification/Injury/Death from different causes. 2(two)

2. Study of models showing different medicolegal problems 2(two)

3. Practical demonstration for various, Chemical Tests for Blood and semen and examination of a suspected stain and
Writing of report. 3(three)

4. Examination of blood for testing blood group & Rh Factor. 1(one)

5. Demonstration of Medicolegal autopsies and writing of 
Reports. 1(one)

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Total Demonstration Classes in 4th Semester : 9(nine)

5th Semester.

- Demonstration of general management of poisoning case
   Including procedure of giving stomach wash . 1(one)

Corrosive meneral acids, Carbolic Acid, Oxalic Acid and
Corossive alkalies.

- Non metalic Iritants Phosphorus, Chlorine, Organo phosphous

Chlorinated compounds. 1(one)

- Metallic Irritants Arsenic Mercury, Copper and Lead, Zinc and
Aluminium salts. 3(three)

4. Vegetable Irritants and other vegetable poisons

Animal Irritants e.g. Snake and other bites, Cantharides 1(one)

5. Opium , Morphine 1(one)

6. Dhatura , Cannabis 1(one)

7. Strychnine Oleander, Aconite, HCN/KCN 1(one)

   - CO, CO 2 Tear gas War gas & other Industrial Methyl

Isocyanate (MIC) gas . 1(one)
Environmental and other Agriculture poisons.

9. Demonstration of Medicolegal autopsies and writing of Reports. 1(one)

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Total Demonstration Classes in 5 th Semester : 11(eleven)

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Total Demonstration Classes in F.M.T. : 10(3 rd) + 9(4 th) + 11(5 th) = 30(thirty)

FORENSIC MEDICINE &TOXICOLOGY

Item Card for Day to Day Assesment

3 rd Semester

Theretical & Oral

<table>
<thead>
<tr>
<th>ITEM</th>
<th>FULL MARKS</th>
<th>MARKS OBTAINED</th>
<th>SIGNATURE OF EXAMINER</th>
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<tbody>
<tr>
<td>A.1. Forensic Medicine Preliminaries and legal proceure in India</td>
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<tr>
<td>A.2. Race Sex Age &amp; Stature determination from skelaton remains including Forensic odontology. (IDENTIFICATION)</td>
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<td>A.3. Inter-sex &amp; foetal age determination</td>
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<td>A.4. Hair, Scare, Tattoo &amp; other marks</td>
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<td>A.5. All prints including dactylography, superimposition</td>
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<td>A.6. DEATH &amp; PM CHANGES (Death &amp; its signs)</td>
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<td>A.7. Rigor Mortis etc.</td>
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<td>A.8. Putrefaction ,its modified forms</td>
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Emblaming.

B.1. Mechanical injuries  10
B.2. Wound balistics  5

3rd Semester

Practical

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<tbody>
<tr>
<td>1. IDENTIFICATION</td>
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<td>1. Diagnosis of individual injuries</td>
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<td>1. Determination of nature weapon from Examination of injuries and age of injuries</td>
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<td>1. Human hair identification</td>
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<td>1. Age estimation from X-ray examination : 16, 18, 21 years &amp; higher age groups and writing of hypothetical Age Certificates from teeth etc.</td>
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<td>1. Sex determination from skeletal remains</td>
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<td>1. Stature determination from long bones</td>
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<td>1. Determination of important body indices : Cephalic Sacral etc.</td>
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<tr>
<td>1. Age determination from skeletal remains including Gustafson; s formula.</td>
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4th Semester
### Theoretical & Oral

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<tr>
<td><strong>A.1. Legal &amp; ethical aspects of practice of medicine</strong></td>
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<td>A.2. Legal aspects of injury</td>
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<td>A.3. Thermal &amp; other injury</td>
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<td>A.4. Traffic &amp; other conveyance injuries and Regional injuries</td>
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<td>A.5. Violent asphyxial death</td>
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<td>A.6. Starvation</td>
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<td>A.7. Forensic psychiatry</td>
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<td>B.1. Sex offences and sex preservation.</td>
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<td>B.2. Impotence &amp; sterility, virginity &amp; Defloration</td>
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<td>B.3. Pregnancy &amp; delivery</td>
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<td>B.4. Abortion &amp; infanticide including Bathered baby syndrome</td>
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<td>B.5. Medicolegal aspects of blood and seminal stains and hazards of blood transfusion</td>
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<td>C.1. General aspects of forensic technology</td>
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<td>C.2. Corrosive agents</td>
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### 4th Semester

#### Practical

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1. Study of photographs relating to
   • Identification
   • Injuries
   • Death signs
   • Asphyxial death
1. Study of Models relating to

1) Identification

2) Injuries
   • Death signs
   • Asphyxial death
C.1. Detection of BLOOD STAINS
   including procedure of collection of material and writing of reports.
C.2. Detection of seminal stains
   including preparation of a hypothetical report.
C.3. Writing of a hypothetical report on examination of a victim and male accused of Rape case.

D. Determination of blood group including Rh factor and writing of a hypothetical report

5th Semester

Theroretical & Oral

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<tr>
<td>A) 1</td>
<td>Carbolic and Oxalic acid, Vitriolage</td>
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<td>2</td>
<td>Metallic Irritant</td>
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<td>3</td>
<td>Non Metallic Irritant</td>
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<td>B) 1</td>
<td>Organic and Vegetable Irritant</td>
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<td>2</td>
<td>Alcohol, Opium, Barbiturate and Drug Dependence</td>
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<td>3</td>
<td>Spinal, Peripheral, Anaesthetics</td>
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<td>4</td>
<td>Cardiac Poison</td>
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5 Asphyxiants, Food Poison 5
6 Organophosphorus, Carbamates, Al. Phosphide 10

5 TH Semester

Practical

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<td>III. TOXICOLOGY</td>
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a) General Diagnosis of Poisoning
b) Procedure of giving stomach wash 10
b) Diagnosis, Fatal dose and treatment of 10

- Organic Acid
- Non metallic Irritants
- Metallic Irritants 10
- Vegetable Irritants
- Animal irritants, Snake bites
- Somniferous Poisons:

Opium, Morphine

7) Inebrients: Ethyl and Methyl Alcohol.

- Cardiac Poison: Oleander, Aconite
- Deliriant: Dhatura, Cannabis 10
- Asphyxiants and Industrial Environmental Poisons: CO, CO₂, Tear & war gases M.I.C and Aniline Compounds
- Synthetic and Semisynthetic Barbiturates etc.
  o MEDICOLEGAL AUTOPSIES
- Prerequisites, Parts of P.M. report, formation of opinion (in each cases demonstrated)

TOTAL MARKS OF CONTINUOUS INTERNAL ASSESSMENT IS = 260
IF A CANDIDATE OBTAIN ‘n’ MARKS, THEN MARKS OBTAINED OUT OF 5 = n/52

TOTAL MARKS CONTINUOUS INTERNAL ASSESSMENT IS 200.

IF MARKS OBTAINED IS ‘n’ THEN MARKS OBTAINED OUT OF 5 = n/40

THEORETICAL

- PART A – Cleared / not cleared
- PART B - Cleared / not cleared
- PART C- Cleared / not cleared
- PART D – Cleared / not cleared

PRACTICAL

- PART I - Cleared / not cleared
- PART II - Cleared / not cleared
- PART III - Cleared / not cleared
- PART IV -- Cleared / not cleared

SIGNATURE

HEAD OF THE DEPARTMENT

2 nd Professional MBBS Exam
Forensic Medicine & Toxicology

Total Marks- 100

Theory : One Paper : 40 marks ( Time 2 hours for Theory Paper )

Oral: 10 marks

Practical: 30 marks

Internal assesment :- 20 marks

Theory :-----------------------------10 marks

Practical-------------------------- 10 marks
100 marks

Practical Examination :-

(Total Marks 40 )

- Bone----------------------------------------------------------------1
- Weapon------------------------------------------------------------1
- Poison--------------------------------------------------------------1
- X- Ray-------------------------------------------------------------1
- Model/Wet-Specimen/Photograph-----------------------------1

(7 minutes x 5 items = 35 minutes )

- Blood Grouping )____________________________one sample

ABO Rh ) (10 minutes )

For each item---------------------------------------------------5 marks

(Total :- 6 items x 5 =30 marks )

A. Theretical+ Internal Assesment + Oral

Full Marks : 40 +10 +10 =60 Pass Marks : 30

B. Practical + Inateral Assesment

Full Marks : 30 + 10 =40 Pass Marks : 20

C. Internal Assesment :

Minimum marks to be obtained in Internal Assessment for appearing in University Examination

is 7 (3.5 Theory + 3.5 Practical ).

Scheme of Examination F.M.T.
Question No. 1 (Group – A)

Two questions  
Marks – 2 x 5

Question No. 2 (Group – B)

a) Two medicolegal importance out of three  
Marks – 2 x 2½
b) Two short notes out of three  
Marks – 2 x 2½

Question No. 3 (Group – C)

a) Two Differentiate between (Total question three)  
Marks – 2 x 2½
b) Two Explanation (Total question three)  
Marks – 2 x 2½

Question No. 4 (Group – D) From Toxicology chapter

a) One long question  
Marks – 5
b) Two short questions  
Marks – 2 x 2½

Model question for question No. 4 (Group – D)

Q.4.  
a) What is antidote? Mention briefly different types of antidotes with examples.  1+4=5

b) i) Write minimum fatal dose of the following poisons (any two):  
2 x 1=2

1. Arsenious Oxide.
2. Organophosphorus Compound
3. Mercuric Chloride.

ii) Mention the preservation to be used for chemical examination for poisoning by (any three):  
3 x 1=3

1. Hydrocyanic acid.
2. Copper Sulphate.
3. Carbolic acid.

The West Bengal University of Health Sciences
Examination – 2005

Subject : Model Question for 2nd Professional MBBS Examination in
Forensic Medicine & Toxicology.

Time: 2 hrs. Full Marks: 40

There are four groups of questions
Use separate answer script for each group.

Answers to questions of group D is to be completed within first twenty minutes and handed
over to the Invigilator positively.

Group – A

1. (a) A girl of above 18 years of age was found lying dead in a lonely place on road
side with torn undergarments with some abrasions and contusions over neck, face and
private parts.

How will you determine that (i) She died due to throttling and (ii) She was sexually
violated before death?

What physical and biological articles would you preserve in this case and why?
(b) A male subject aged about 65 years was found in a dead state with gaping wounds over head area. Mention the findings which will suggest that (i) he died to chopping cuts (ii) he consumed alcohol prior to death (iii) death was homicidal in nature.

(c) Name some poisons which will constrict pupil.

Describe briefly the symptoms and signs treatment of poisoning by such a compound in rural Bengal.

(d) Describe briefly the immediate restraining of a lunatic. What findings may suggest that a male subjected is feigning to be mentally ill?

Group – B

2. (a) Write Medicolegal importances of (any two)

i) Turner’s Syndrome

ii) Second life test

iii) Diatons

iv) Study of maggots

(b) Write short notes on (any two):

i) Universal antidote

ii) Illusion
iii) Professional Secrecy

iv) Examination – in – Chief.

**Group – C**

3. (a) Differentiate between (any two):

i) Gunshot wounds of entrance and exit in contact shot.

ii) Respired and unrespired lung in a dead newborn.

iii) Somatic & molecular death

iv) Burn & Scalds

(b) Explain why (any two):

i) Covering is an infamous conduct

ii) Hesitation cuts may be seen in suicidal cut throat injury

iii) Quickening is not a sure sign of pregnancy

iv) Lochia is seen in a recently delivered woman.

**Group – D**

Q.4. a) What is antidote? Mention briefly different types of antidotes with examples. 1+4=5
b) i) Write minimum fatal dose of the following poisons (any two):

1. Arsenious Oxide.
2. Organophosphorus Compound
3. Mercuric Chloride.

ii) Mention the preservation to be used for chemical examination for poisoning by (any three):

1. Hydrocyanic acid.
2. Copper Sulphate.
3. Carbolic acid.