

SYLLABUS:

LEARNING METHODS :

Lectures, tutorials, practical demonstrations, group discussions and seminars. Distribution of teaching hours. Didactic lectures should not exceed one third of the time schedule, two third schedules should include Practicals, Demonstrations, Group discussions, Seminars and Tutorials.

Learning process should include living experiences and other case studies to initiate enquiries in criminal matters and Medico-legal problems.

A) Theory: Lectures	40 hours
(including Tutorials, Seminars & Allied)	20 hours
Total = 60 hours	

B) Practicals	25 hours
(Including demonstrations)	15 hours
Total = 40 hours	

This period of training is minimum suggested. Adjustments, whenever required, depending on availability of time, may be made.

CONTENTS & DIVISION:

1. PART – 1 FORENSIC MEDICINE:

A) INTRODUCTION

- i. Definition, Scope Relevant to Subject
- ii. History of Forensic Medicine
- iii. Need, Scope, Importance and probative value of Medical evidence in Crime Investigation

B) FORENSIC IDENTITY:

- i. Introduction, definition, types, corpus delicti
- ii. Data useful for Identification of Living and Dead
- iii. Age estimation and its medico-legal Importance
- iv. Sex determination and it's medico-legal importance

- v. Other methods of establishing identity: Dactylography, Tattoo marks, Deformities, Scars
- vi. Identification of decomposed, Mutilated bodies and skeletal remains
- vii. Medico legal aspect of DNA fingerprinting - a brief introduction
- viii. Various trace materials having value for evidence in crime

C) THANATOLOGY:

- i. Definition and concept of death, Brainstem Death in relation to Organ Transplantation
- ii. Causes of sudden Natural deaths
- iii. Changes after death, Cooling, Hypostasis, Changes in eye, Muscle changes, Putrefaction, Adipocere, Mummification, Estimation of time since death
- iv. Presumption of death and survivorship, disposal and preservation of dead bodies

D) MEDICO-LEGAL AUTOPSY

- i. Autopsy: Objectives, Facilities, Rules and Basic techniques, Proforma for reporting medico-legal autopsy
- ii. Exhumation, examination of mutilated remains, Obscure autopsy and post-mortem artifacts

E) TRAUMA

- i. Definition and classification of injuries:
- ii. Blunt force Trauma: Abrasions, Contusions & Lacerations
- iii. Sharp force Trauma: Incised, Stab and Chop wounds
- iv. Physical methods of Torture and their identification
- v. Firearm injuries and Explosive injuries and Basics of Firearms
 - a) PM examination of Firearm injury deaths.
 - b) Removal and collection of Bullets, Pellets etc.
- vi. Complications and causes of death due to injury.
- vii. Medico legal aspects of Trauma in General and reporting of cases of Hurts and relevant IPCs
- viii. Regional injuries: Head injury, mechanism, Injury to Scalp, Skull,

Brain and Spinal Injuries

- ix. Intracranial Haemorrhage, changes in Brain
- x. Road Traffic Accidents
- xi. Thermal injuries: Injuries due to heat and cold, Frostbite, Burns, Scalds and Bride burning
- xii. Injuries due to Electricity,
Lightening
- xiii. Non-Accidental
Domestic Violence
- xiv. Starvation deaths

F) MEDICO-LEGAL ASPECTS OF SEX, MARRIAGE AND INFANT DEATH

- i. Explanation and ML Importance of Terminologies: Impotence, Sterility, Virginity, Pregnancy, Delivery, Paternity, Legitimacy, Assisted Reproductive Technique Medico Legal Aspects and PNDT Act,
- ii. Sexual Offences and Sexual perversions:
- iii. Examination of Rape and Sodomy cases.
- iv. Abortions, Medical Termination of pregnancy, Criminal abortions and relevant IPC sections.
- v. Infant death:
 - a) Explanation of Terminologies Viability Live Births, Deadborn, Stillborn
 - b) Determination of age of Foetus and Infant with special referenceto 3, 5, 7 & 9 months of I.U.Age
 - c) Infanticides: Autopsy to confirm Livebirth, period of survival, causes of deaths
 - d) Battered Baby Syndrome and Sudden Infant Death Syndrome.

G) ASPHYXIAL DEATHS

- i. Introduction, Pathophysiology, General Signs-Symptoms Asphyxia
- ii. Hanging: Definition, Types and Causes of death, PM Finding, MLI
- iii. Strangulation, Suffocation and Traumatic Asphyxia: Definition, Types and causes of death, PM Finding, MLI

- iv. Drowning – Definition, Types, Mechanisms and Causes of death, MLI, PM Finding, Diatom Test.

H) FORENSIC PSYCHIATRY

- i. Basic concepts of Forensic Psychiatry in respect of Civil and Criminal responsibility
- ii. Examination, Certification, restraint and admission to Mental Hospital
- iii. Mental Health Act 1987: Principles and Objectives

2. PART – 2 TOXICOLOGY

A) GENERAL PRINCIPLES:

- i. Introduction to Toxicology
- ii. Epidemiology of poisoning
- iii. General consideration and Laws in relation to poisons / Narcotic drugs and Psychotropic substances Act, Duties and Responsibilities of attending Physician.
- iv. Basics of Environmental and Industrial Toxicology in relation to Health & Ecology;
- v. Common poisons and their classification, Identification of common poisons, Routes of Administration, Actions of poisons and factors modifying them, Diagnosis of poisoning (Clinical and Confirmatory), Treatment / Management of cases of acute and chronic poisoning.
- vi. Analytical Toxicology (Principles: Bedside & Common Lab. Tests), Collection, Preservation and Dispatch of Viscera to FSL
- vii. Regulatory Toxicology for prevention of Hazards to Health and Ecology.

B) CORROSIVE & IRRITANT POISONS :

- i. Inorganic Corrosives- Sulphuric, Nitric & Hydrochloric Acid
- ii. Organic Corrosives- Phenol, Oxalic Acid
- iii. Inorganic Non-Metallic Irritants- Phosphorus, Halogens
- iv. Inorganic Metallic Irritants- Arsenic, Lead, Mercury, Copper
- v. Organic Vegetable Irritants- Abrus, Castor, Croton,

Calotropis, Semicarpus, Ergot.

- vi. Organic Animal Irritants – Snake Bite, Scorpion & other common insect bites diagnosis and Management; Medico-legal Aspects
- vii. Mechanical Irritants- diagnosis and treatment & Medico-legal Aspects

C) NEUROTOXIC:

- i. Inebriates- Ethyl Alcohol, Methyl Alcohol
- ii. Somniferous and Sedative Hypnotics – Opium and Derivatives, Barbiturates
- iii. Deliriant- Dhatura, Cannabis, Cocaine.
- iv. Insecticides/ Pesticides/ Agrochemical- Organo-phosphorus Compounds. Organo-chlorides, Carbamates, Pyrethroids, Aluminium phosphide.
- v. Spinal Poisons- Strychnine
- vi. Peripheral Poisons- Curare

D) ASPHYXIANTS (GASES)-

Carbon monoxide, Carbon Dioxide, Cyanogens and Cyanides

E) CARDIAC POISONS-

Oleanders, Aconite, Tobacco

F) OTHER POISONS:

- i. Domestic/ Household Poisons- Kerosene, Detergents, Disinfectants, Cosmetics, Rodenticide mothballs etc.
- ii. Therapeutic Drug Toxicity/ poisoning by Medicines- Salicylates, Paracetamol, Newer derivatives of sedatives
- iii. Food Poisoning- Bacterial, Viral, Mushrooms, Chemical etc.
- iv. Drugs of dependence and Drug Abuse.

3. PART – 3

MEDICAL JURISPRUDENCE:

(A) LEGAL AND ETHICAL ASPECTS OF PRACTICE OF MEDICINE

- i. The Indian Medical Council and State Medical Council: Formation, Functions
- ii. Rights, Privileges and Duties of Registered Medical Practitioners
- iii. Infamous conduct, Professional secrecy and privileged communications
- iv. Medical Ethics and prohibition of Torture & care of Torture Victims
- v. Consent – Its relevance in Medical Practice
- vi. Medical Negligence and contributory negligence, Precautionary measures and defences for Medical Practitioners against legal actions, Medical/Doctors indemnity insurance, Consumer Protection Act relevant to medical practice
- vii. Euthanasia – Current views and dilemmas, Different codes of Medical Ethics and Ethics in Research
- viii. Common medico-legal problems in Hospital practice

4. PART – 4

LEGAL PROCEDURES IN MEDICO-LEGAL CASES:

- i. Medico-Legal Investigations of death in suspicious circumstances, different Inquest, type of offences
- ii. Types of Criminal courts and their powers, punishments prescribed by law, kinds of witnesses, Evidence, Documentary Medical evidence, Dying declaration and Dying deposition
- iii. The Trial of criminal cases, Rules and Conventions to be followed by Medical Witness at Medical evidence, subpoena, conduct money
- iv. Relevant Sections from the Indian Evidence Act, Indian Penal code and Criminal Procedure code.

5. PART - 5

INTEGRATED TEACHING FOR II MBBS –

Sr. No.	Broad topic	Department	Lecture topics	Duration
1	PNEUMONIA	Microbiology	Lab diagnosis of Pneumonia	1 Hour
		Pathology	Pathology of Pneumonia	1 Hour

		Medicine	Clinical features and Radiology	1 Hour
		Pharmacology	Treatment	1 Hour
		Community Medicine	Epidemiology and prevention	1 Hour
		F.M.T	Medico Legal Aspect of Pneumonia	1 Hour
2	HIV	Microbiology	Virology of HIV	1 Hour
			Diagnosis of HIV	1 Hour
		Pathology	Pathogenesis of HIV Infection	1 Hour
		Medicine	Clinical features and Opportunistic infections in HIV	1 Hour
		Pharmacology	Treatment of HIV	1 Hour
		Community Medicine	Epidemiology of HIV	1 Hour
			Prevention of HIV	1 Hour
			NACO activities	1 Hour
		F.M.T.	Medico legal aspect of HIV	1 Hour
		Medicine	Clinical features	1 Hour
Pharmacology	Treatment	1 Hour		

6. PART - 6 BIOETHICS TOPICS (2+2 HOURS)

Sr. No.	Topic	Department	Hrs.
1.	Ethics of human sexuality, gender reassignment	FMT	1
2.	Organ donation	FMT	1

7. Research methodology (10 sessions in II MBBS)

8. Communication skill (5 sessions in II MBBS)

9. Language sessions (5 sessions in II MBBS)

PRACTICALS (Including Demonstrations)

- Practicals will be conducted in the laboratories.
- Objective will be to assess proficiency in skills, conduct of experiment, interpretation of data and logical conclusion.
- Emphasis should be on candidate's capacity in making observations and logical inferences in order to initiate enquiries in criminal matters and medico-legal problems.

CONTENTS:

PART - 1 FORENSIC MEDICINE

REPORT ON:

1. Estimation/Certification of Age
2. Recording of fingerprints
3. Examination/Certification of the Injured [Prescribed Forms]
4. Examination of the Causative Agents in cases of Injuries(e.g. Weapons, Instruments)
 - a) Hard and blunt weapons
 - b) Sharp cutting, sharp pointed & Sharp Heavy cutting weapons
 - c) Firearm weapons
5. Sexual offences:
 - a) Examination/Certification of Victim
 - b) Examination/Certification of Accused
6. Examination of Foetus to opine about age
7. Examination of Bones for Medico-legal purpose to determine age,sex, stature, cause of death, time since death
 - a) Skull and Mandible
 - b) Pelvis
 - c) Femur, Humerus

STUDY OF:

8. Medical certification of cause of Death as per Birth and Death registration Act [Prescribed Forms]
9. Studies of Skia-grams for estimation of age, bony injury, foreignbody, and pregnancy
10. Photograph of different events of Medico-legal importance and post-mortem changes
11. Study of Various museum specimens of medico-legal significance
12. Study of Various slides of medico-legal significance
13. Demonstration of Instruments:
 - a) Used in treatment of acute poisoning cases
 - b) Used for causing abortions
 - c) Used for conducting autopsy (Dissection Set)

PART – 2 FORENSIC TOXICOLOGY

1. Examination/Certification of Alcoholic [Prescribed Forms 'A' & 'B']
2. Study of Common poisons:
[Sulphuric Acid, Nitric Acid, Hydrochloric Acid, Carbollic Acid and Oxalic Acid, Phosphorous, Lead, Arsenic, Mercury, Copper, Glass powder, Castor, Croton, Calatropis Abrus Precatorius (Ratti), Dhatura, Cannabis Indica, Opium, Aconite, Yellow Oleander, Strychnine, Snakes, Scorpion, Alcohol, Methyl Alcohol, Kerosene, Organo-phosphorus compounds, Organ-chlorocompounds, Carbamates (Carbaryl)] and other commonly used poisons, antidotes and preservatives

PART – 3 MEDICAL JURISPRUDENCE

Study of Medical Certificates [Prescribed Forms]

- a. Sickness Certificate
- b. Fitness Certificate
- c. Certificate of Physical fitness

PART – 4 LEGAL PROCEDURES IN MEDICO-LEGAL CASES

Orientation of various formats of specified forms:

Consent to surgery Anesthesia and other Medical services, Request for sterilization, Consent to access to hospital records, Authorization for Autopsy, Dead body Challan used for sending a dead body for post-mortem examination, Request for the second inquest by Magistrate on the dead body, Provisional post-mortem certificate, Post-mortem form, Pictorial Post-mortem form, Form for the Final cause of death, Forms for dispatch of exhibits other than the viscera to chemical analyzer, Forms for dispatch of Viscera for Histopathological Examination, Form for dispatch of viscera to chemical analyzer, Forensic Science Laboratory report form, Summons to witness.

Each student shall attend and record as a clerk -

- a. As many as possible cases / items of medico-legal importance
- b. 10 cases of medico-legal autopsies

The Journal should be scrutinized by the teacher concerned and presented during the university examination.

Efforts be made so that each student will attend the court at least 2 cases when Medical Evidence is being recorded.

**MAPPING OF PROGRAMME OUTCOMES [POs] AND
COURSEOUTCOMES [COs] OF- II - MBBS
PROGRAMMES**

PROGRAMME OUTCOMES :

Programme Name: MBBS	
Subject Code: 01010304	
Sr. No.	By the end of the programme, the MBBS Graduate will have /be:
PO 1	Knowledge and Skills
PO 2	Planning and problem-solving abilities
PO 3	Communication
PO 4	Research Aptitude
PO 5	Professionalism and Ethics
PO 6	Leadership
PO 7	Societal Responsibilities
PO 8	Environment and Sustainability
PO 9	Lifelong Learner

Year II	
Course Code	Course Title
01010201	Pathology
01010203	Pharmacology and Therapeutics
01010202	Microbiology
01010304	Forensic Medicine and Toxicology

Forensic Medicine & Toxicology : (01010304)		
CO. No.	At the end of the course, the learners should be able to:	Mapped Programme Outcomes
CO 1	Knowledge of court & Law enforcing agencies, Knowledge of Natural & Unnatural Deaths, Certification of Deaths & Organ Transplantation Act.	PO1,PO2,PO3, PO4,PO5,PO6, PO7, PO8, PO9
CO 2	Knowledge, observation, analysis, interpretation of Postmortem Findings in Various Types of Deaths And Writing of Postmortem Reports.	PO1,PO2,PO3, PO4,PO5,PO6,PO7,PO9
CO 3	Judicious & effective communication with Lawyers in Cases of medico-legal examination and Good report writing.	PO1,PO2,PO3, PO4,PO5,PO6,PO7,PO9
CO 4	Knowledge, Diagnosis and management of common Poisoning case and writing medico-legal report and Reporting.	PO1,PO2,PO3, PO4,PO5,PO6,PO7,PO9
CO 5	Knowledge of various laws and regulation related to hospital service. Knowledge of medico-legal records related to casualty and emergency medico-legal cases.	PO1,PO2,PO3, PO4,PO5,PO6,PO7,PO9
CO 6	Acquire Integrated knowledge of Para-clinical and Clinical specialties related to Medico-legal issues.	PO1,PO2,PO3, PO4,PO5,PO6,PO9
CO 7	Knowledge of laws in relation to medical Practice and develop attitude communication and professional skill to handle ethical and medical negligence issues.	PO1,PO2,PO3,PO4,PO5, PO6,PO7,PO9

