

DEPARTMENT OF FORENSIC MEDICINE

JAWAHARLAL NEHRU MEDICAL COLLEGE
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Dated:

Ph.D. Syllabus [Forensic Medicine & Toxicology] 2018-19

Theory

- _ Basic medical sciences namely Anatomy, Physiology, Pharmacology, Pathology and Microbiology as applied to Forensic Medicine
- _ Surface land marks & regional anatomy of medico-legal significance.
- _ Comparative anatomical study of Male & Female skeleton.
- _ Anatomy of neck with special references to violent asphyxial deaths.
- _ Anatomy of reproductive organs
- _ Gross anatomy of heart and coronaries.
- _ Outline of embryonic / fetal development.
- _ Microscopic anatomy (histology of different organs & tissues, such as brain, heart, lungs, liver, kidneys, spleen, thyroid, adrenals, bone, and skin)
- _ Body water & fluid balance.
- _ Blood grouping & Rh incompatibility.
- _ Physiology of menstruation & pregnancy.
- _ Physiology of thermo-regulation.
- _ Patho-physiology of shock.
- _ Blood sugar regulation & diabetic coma, hypoglycemic coma.
- _ Outline of the functions of circulation, respiration, hemopoietic, nervous, digestive, endocrine, excretory, reproductive and musculo-skeletal system.
- _ Patho-physiology of sexual functions and histopathology.
- _ General pathology: Pathology of cell / tissues – Degenerative changes & secondary changes, atrophy, hypotrophy, aplasia, hyperplasia, ischemia, necrosis, infarction, cloudy swelling, amyloidosis and embolism, asphyxial deaths, electricity, gun-shot wounds, poisoning, thrombo-embolism, fat embolism, aspirations, wound healing, histological determination of time of death.
- _ Body's local and systemic response to trauma.
- _ Healing and fibrosis (Pathology of scar)
- _ Common general and systemic diseases caused by physical/chemical agents.
- _ Disorders of infancy and old age changes relevant to forensic medicine.
- _ Pathology-gross and microscopic, in myocardial infarction, congenital heart diseases, tuberculosis, cirrhosis, malnutrition, starvation.
- _ Histology with important Staining Procedures
- _ Microbiology and serology of venereal diseases infections.

- _ Microbiology of Cadavers.
- _ Relevant General Pharmacology, Pharmacology of Important Antidotes & Drugs of Addiction, Anti-sera, Hormones & Anesthetic Drugs.
- _ Forensic Medicine including other clinical subjects as applied to it.
- _ Identification of the living and dead, determination of race and religion, sex, age, external peculiarities, such as moles, birth marks, occupational marks, anthropometry, fingerprints, and foot prints handwriting etc. and their medicolegal aspects. Evaluation of evidence from the skeleton. Problems of reconstruction, and superimposition technique.
- _ Medico-legal aspects of allergy and anaphylaxis.
- _ Evidence from trace elements, like hair and biological stains of blood, semen, sweat, saliva, milk, sputum etc.
- _ Laboratory investigations as required in medico-legal situations, like unconsciousness, sudden death from unknown causes, therapeutic misadventures, industrial exposures and the like.
- _ Outlines of analytical and histopathological techniques as applied to forensic medicine.
- _ Injuries and Thermal deaths from cold, heat, electricity, lightning and radiation.
- _ Death from starvation.
- _ Mechanical injuries & their medico-legal aspects in relation to nature of injuries, accidental, suicidal, homicidal, and distinction between injuries caused during life and after death. Medico-legal examination of an injured person. Regional and Transportation injuries.
- _ Examination of weapon in relation to inflicted injuries.
- _ Firearm injuries.
- _ Causes of death from wounds.
- _ Forensic radiology in identification, pathology, dentistry, child abuse, trauma, medico-legal implications of radiological procedures.
- _ Forensic psychiatry: Various Acts in relation to Forensic psychiatry, Classification of mental disorders and abnormal human behaviors. Medico-legal aspects of insanity and abnormal human behavior as regards to civil & criminal responsibilities and rules regarding admission, treatment and discharge of mentally ill person in the Mental Hospitals. Feigned insanity, Juvenile delinquency in the juvenile court. Restraint of mentally ill person.
- _ Biology of behavior, emotion, stress, attitudes, normal & abnormal personalities.
- _ Psychological assessment & testing personality and its disorders, abnormal psychology, health psychology, assessment strategies in medical education.
- _ Study of suicide, production of personality and circumstances. Postmortem analysis of suicide notes and its circumstances.
- _ Counseling in normal sexual behavior and sex related disorders.
- _ Medico-legal aspects of emergency, resuscitation in intensive care
- _ Trauma, Work Stress & Disease.
- _ Torture medicine: Medico-legal aspects & duties of physician in cases of torture.
- _ Mass disasters.
- _ Bombs and other explosives. Biological and chemical warfare and barotrauma.
- _ Impotence, Sterility, Artificial insemination, sterilization. Test tube babies & their medico-legal aspects.
- _ HIV and AIDS.
- _ Virginity, Pregnancy, Delivery in relation to suit of nullity of marriage, divorce, and

- legitimacy affiliation cases etc.
- _ Abortion – Criminal & Justifiable, Laws in relation to criminal abortion. Duties of medical persons when called to treat a case of criminal abortion. MTP Act 1971.
- _ Sexual Offences – Rape, Incest, unnatural sexual offences, such as sodomy, Tribadism, Bestiality & Buccal Coitus, Sexual perversions.
- _ Infanticide.
- _ Forensic Toxicology & Medical Jurisprudence
- _ General & Forensic Toxicology including Classification, Mechanism of Action, Clinical Features, Diagnosis, Management, Autopsy appearances & Medico-legal Importance of Poisons.
- _ Addiction, de-addictions and drug abuse.
- _ Important Toxicological Analytical Techniques.
- _ Forensic Science: Recent Advances & Modern Trends.
- _ Introduction & working of various Wings of Forensic Science Laboratory - Immunology, Examination of biological trace material evidence, ballistics, Crime Laboratory, Forensic Photography.
- _ Definition of Medical Jurisprudence.
- _ Introductory remarks, Criminal Courts & their powers, inquests and legal procedures, procedure in court, medical evidence, various medical certificates, medico legal reports, dying declaration & dying deposition, witness, conducts and duties of the doctor in the witness box, professional secrecy.
- _ Regulation of medical profession, various governing bodies, their constitution & functions. Laws in relation to medical man.
- _ Rights, duties & privileges of a registered medical practitioner.
- _ Informed consent in medical practice. Infamous conduct. Medical malpraxis.
- _ Physician duties under various public health & medical Acts.
- _ Problems of privileges and confidentiality etc. Physician in the Witness Box.
- _ Liabilities of Hospitals, nursing home and public dispensaries to patients.
- _ Medical practice in relation to Insurance.
- _ Relevant parts of Indian Penal Code, Criminal procedure, Indian Evidence Act, Immoral Trafficking Act, Workman's Compensation Act and other Laws related to medical practice.
- _ Law & Procedures related to Organ Transplantation.
- _ Legal & Ethical aspects of Family planning procedures.
- _ Therapeutic trial & human experimentation etc.
- _ Medico-legal aspects of Organ & Tissue transplantation.
- _ Euthanasia.
- _ Supreme Court and High Court Landmark judgments related to Forensic Medicine and Medical Jurisprudence
- _ Relevant Laws, Legal Procedures, Psychiatry & Medical Jurisprudence including MCI, Ethics & Bio-Medical Research, Consent, Negligence, Evidence & Recording of Evidence ,
- _ Relevant Sections of IPC, Cr Pc, IEA, Acts - CPA, MTP, PNDD, NDPS, OT , NHRC
- _ Medical certification of cause of death and relevant vital statistics.
- _ Day-to-day MLC problems in hospitals.
- _ Recent laws applicable to medical man.
- _ Value of medical opinion in the court of law.
- _ Forensic Pathology including Forensic immunology & recent advances

- _ Medicolegal autopsy of dead body, decomposed and mutilated body or its fragments / skeleton, bones, exhumation & rules regarding it.
- _ Death, manner of death, modes of death, cause of death, sudden death, signs of death and changes following death. Estimation of postmortem interval, Forensic Entomology, Postmortem chemistry of body fluid like blood, CSF and vitreous humor, presumption of death and presumption of survivorship.
- _ Violent asphyxial deaths: Hanging, Strangulation, Suffocation and Drowning.
- _ Death from sudden violence, suspicious, unknown and unnatural cause, disease following trauma.
- _ Basic concepts of immunology and serology.
- _ Principles of various immuno-serological tests, precipitin test, pregnancy test, sperm antibody test.
- _ Role of immunological techniques in crime investigation and exclusion of parentage.
- _ Incompatibility and adverse reaction of drugs commonly used in therapy etc.
- _ Anaphylaxis and hypersensitivity reactions.
- _ Different types of teaching aids, methods of teaching & question paper formation of different types (MCQs, Structured, Short, and Essay types).
- _ DNA & Fingerprint system, Lie Detector & Polygraph, Narco-analysis.
- _ National Health policies.
- _ Life saving maneuvers and pre-hospital first aid.
- _ Routine and advanced Imaging Techniques and equipments.
- _ Medico-legal record keeping.
- _ Basics of medical education technology and research methodology.
- _ Computer and its use and its applicability in the specialty.
- _ Medical auditing.