

**SYLLABUS FOR
POSTGRADUATE TRAINING IN M.D. (FORENSIC MEDICINE AND TOXICOLOGY)
VEER NARMAD SOUTH GUJARAT UNIVERSITY - SURAT.**

1. A series of P.G. Lectures by teachers.
2. A series of seminars by the P.G. Students.
3. P.G. Cases discussions of Autopsy, injuries, insanity, age impotency , sexual offenses , poisoning etc.
4. P.G. Tutorial classes- chapter of subject- wise.
5. Attending, performing medico-legal autopsies.
6. Attending, performing medico-legal work at the causality.
7. Participation in undergraduate practical teaching.
8. Undergoing training when posted in different unites and laboratories of the department.
9. Rotation posting in the departments of Psychiatry, Radiology, pathology, dentistry, anatomy, bio-chemistry, medicine, surgery, obs. & gynecology, causality and microbiology.
10. During the thesis work/dissertation work as allotted by the P.G. Teacher.
11. Participation in the departmental research work.
12. Visits to the scene of offenses to be organized with the help of police.
13. Attending the courts to give evidence.

Syllabus details:

(A) Forensic Pathology

Inquest , courts and legal procedures, investigation of scene of death; Medico legal autopsy and exhumation procedures; Identification of the dead; Estimation of the time of death; Identification from skeletal remains and teeth; Death from blunt force injuries; Death from cutting and stabbing wounds; Death from fire-arm injuries; General features and medico legal aspects of wound ; Trauma and disease; Death from acute neurogenic cardiac vascular failure; Death from interference with oxygenaties-asphyxial; Hyperbaric and anoxic death; Death from burns, Electrically and lightening ; death from starvation; Heath and cold exposures; Sudden unexpected natural death; Still birth and infant deaths; Death from rape and sexual assaults; Death from criminal miscarriage ; fatalities; Death from therapeutic mishaps; Death from poisoning and Drug abuse; Arte facts in Forensic pathology; Negative and obscure ; Identification of trace evidence and biological materials; collection, preservation packing and dispatch of organ and tissues for laboratory examinations; Physical evidence in criminal cases; Forensic Pathologist as a witness; Radiology as an aid to Forensic pathology.

(B) History of forensic medicine, clinical forensic medicine and forensic psychiatry:

Historical development and progress of Forensic Medicine in India and Medical examination of living subjects for the determination of age, sex, race, injuries, poisoning, impotency, sterility, pregnancy, delivery, legitimacy and paternity; examination of victim and accused in rape and unnatural sexual offenses; certification of fitness, disease, death and drunkenness ; disability evaluation and medical examination in insurance cases; Medico legal aspects of emergencies in general and hospital practice according of dying declaration ; medico legal aspects of resuscitation and intensive care.

Medicolegal aspect of insanity and abnormal human behavior classification and causes of insanity, psychopathic personality and the mentally retarded; sexual deviations perversions; diagnosis of insanity and feigned insanity; restraint on a amnesia, feigned deaf-mutian and malingering; medico legal value of E.C.G. ; lie-detector and truth serum (Narco-analysis); civil and criminal responsibilities of the insane; procedure of examination and certification of mentally ill; code of criminal procedure relating to an insane criminal; psychiatric disabilities following and therapeutic procedure ; mental health and psychiatrist in the court of law problems of confidentiality and privileged communication ; medico legal aspect of psychiatric emergences.

(C) Forensic toxicology and medical jurisprudence:

Definition, law relating to drugs and poisons: medico legal and pattern of poisoning to India ; classification of ; routes of administration and action of poison ; diagnosis of poisoning in the living and dead; postmortem examination in a case of poisoning and collection, packing and dispatch of viscera and other biological material for chemical analysis in poisoning scheme of general treatment and management in cases of poisoning; toxicological and medicolegal aspects and treatment of various poison; medico legal aspect of drug dependence drunkenness; radiation hazards and war gases ; principles of non laboratory and analytical methods used for isolation and identification of poison. Toxicologist in the court of law. Statutes relating to medical allied profession; crates oath and the code of ethics; powers and functions the Indian and State Medical Councils; regulation and maintenance of the standard of medical education ; right and duties of Registered Medical Practitioners; ethical and legal requirements of the practice of medicine – infamous conduct and disciplinary control; doctor's duties in criminal matters; legal and ethical aspects of rights of unborn and the ; legal and ethical aspect of family planning and population control- abortion; sterilization and contraception ; medico legal relating to artificial insemination ; divorce and nullity of marriage; legal and ethical aspects of suicide and euthanasia; medico legal aspect of moment of death and organ transplantation , legal and ethical relating to therapeutic trials and human experimentation; health in industries and professions and their medico legal aspects; doctor's duties under the workmen's compensation acts; professional liability and medical defense societies standard of in diagnosis and treatment medical negligence in general and hospital practice and therapeutic misadventures , consent in medical practice ; Medico legal aspect of adverse drug reactions and states. Medical expert witness and his testimony problems of confidentiality of privilege communication.

(D) Forensic biochemistry, toxicology and histopathology:

Postmortem chemistry of blood , C.S.F. ; and vitreous and identification of body fluids – blood, semen, saliva, faeces , urine bile , milk, sputum and CSF etc. Laboratory findings and investigations in cases of myocardial ischemia and injuries; rape and other sexual offences; transfusion, reaction and blood group incompatibility states; allergic states and anaphylactic deaths.

Advances in analytical techniques as applied to Forensic Medicine and Toxicology.

Fundamental of Immunology – immunoglobulins , Immunological principles, terms and theories, Antigens, Antibodies, complement etc. Antigen-antibody reaction and the principles involved. And anaphylaxis and their medico legal aspects.

- Agglutinins and agglutinogens – plant agglutinins.
- Cellular antigens and blood group systems and their inheritance.
- Scymntrotnin groups : Gm, Gc type haptoglobins, transferitin type, groups.
- Polymorphio blood enzyme – Serum esterases , erythrocytes. Osterases , blood
- phosphatase, cholinestrase , pseudo-cholinestrase, lactic dehydrogenase, glucose phosphatase dehydrogenase, red cell phosphogluco-mutas and alkaline phosphatase etc.
- Hemoglobin and its variants.
- Problems of individualization of finger-printing of blood stains .
- Blood group factors in other body fluids and tissue.

Methods of raising purification and titration of group specific and species specific antisera.

(E) Forensic anthropology including forensic odontology

Surface landmark of anthropological significance.

Identification technique – finger and palm prints (dermatoglyphics) foot – print , lip – print and palate – prints.

Identification from complexion and features , body measurement and weight, anthropometric measurement in the living Bertillon's methods , measurement and descriptive characteristics of head and face, hair Forensic hair a study.

- Skeleton : Age earlier years: age later years
 - Sexing of skeleton remain
 - Calculation of stature from skeleton or parts thereof
 - Differences in human skeleton
 - anthropometry as related to skull in individual bones like , clavicle, scapula, long bone, vertebrae, hip bone and pelvis, sacrum talus ; calcaneus etc.
 - facial reconstruction from skull and super-imposition technique.
 - Comparative osteology – identification of human and domestic and wild animal from skeleton.
- Forensic Odontology: Metrical background of teeth and identification – racial feature sex, geographical distribution, occupation and habit and socio-economic states.
- Identification from dental peculiarities, dental remains and dental restoration – artificial denture and dental fittings
 - Age determination from teeth- dentition – temporary and permanent and secondary dental changes
 - Teeth and crime – bite mark battered baby
 - Teeth and Trauma- accidental injury and criminal assaults.
 - Pathological changes in jaw bones and teeth caused by poisons.
 - Teeth and negligence – malpractice in dentistry and failure to preserve trace evidence.
 - Collection and preparation of skeleton remain and teeth for anthropometric studies.
 - Age of skeletal remains- how old are the remains ? Radioactive tracer studies and elemental analysis.
 - Use of radiology in skeletal and dental identification.

(F) Medical law ethics and human rights:

Law relating to medical expert evidence ; hurt and homicide , infanticide; suicide and accidents; sterilization family planning contraceptive and abortion; sexual offenses and sex perversions; legitimacy adoption , divorce and nullity of marriage; certification and disposal of dead; sale of drugs and poisons pharmacy and drug acts; anatomical and tissue donation acts; industrial hazards and workmen's compensation acts; medical and allied profession- Medical Council and medical degree acts; Powers and functions of the Indian and state medical Councils.

- Doctor's duties/liabilities in criminal matters, under the prevention of communicable disease act; in food adulteration acts; in public health and sanitation acts.
- Rights and duties of Registered Medical practitioner , disciplinary Central and Infamous conduct.
- Liability for unauthorised autopsies and related procedure.
- Doctor's duties and liabilities in general and hospital practice, standards of medical care, negligence and therapeutic misadventure.
- Professional secrecy and privileged communications.
- Physician's liabilities defamation.
- Medico legal and Ethical problems relating to artificial insemination, embryo transfer, test-tube fertilizations and genetic engineering.
- Legal and ethical aspect of sex change operations.
- Advances in scientific and medical Technology and their legal and ethical implications.

- Professional liability , Insurance and medical defense societies.
- Medico legal aspect of resuscitation and intensive care.
- Medico legal and ethical aspects of emergencies in general and hospital practice.
- Medical expert witness and his testimony problems of confidentially and privileged communicate in the court of law.
- Physician's liabilities while attending in will making.
- Psychiatrist – patient testimonial privilege
- Hippocratic oath and code of medical ethics.
- Ethical question relating to the use of Red cross symbol
- Right or : the unborn and the winner; protection against physical and mental torture brain washing, and physician's liabilities; the patient in general and hospital practice; health and right to work and obligation of the state and Physicians; the dying and right to life euthanasia and suicide .
- Patients right of privacy and physical integrity and physician liabilities for violation or invasion thereof.
- Legal concept of property , in the dead body , disposal of the dead and survivor rights.
- Legal and ethical problems relating to therapeutic trials, human experimentations and innovative therapy.
- Medico legal aspects of : the moment of death and organ/ tissue transplantation stress situation.
- Consent in medical practice and compulsory medical examination and treatment .
- Rights against self incrimination.
- Therapeutic misadventures, adverse drug reaction and iatrogenic state – physician's liabilities and patients rights. Legal value and implications of patient's medical records and patient's right to inspect and obtain copies thereof.
- Legal and ethical aspects of food additives.
- Public health , legal and ethical aspect of environmental pollution.
- Medicine in war-time – rights of wounded or sick every soldiers, prisoners of war and civilians to medical care and treatment and legal and ethical aspects of biological welfare.

(G) Traumatology including medicolegal aspect of wounding.

- Definition and general consideration of wounds.
- Classification of wounds caused by mechanical trauma.
- Histopathology and medico legal aspects of blunt force injuries, cutting injuries, stabbing injuries, fire-arm injuries and injuries cause by detonation of explosive.
- Medico legal aspects of wound in general.
- Postmortem injuries and artifact's.
- Examination of the injured person in life.
- Postmortem examination of traumatic death.
- Systemic response to trauma – local and general.
- Secondary effects and complication of trauma.
- Shock and circulatory disturbance following trauma.
- Post traumatic thrombosis and embolic manifestations.
- Trauma and infection – local wound infection , regional infection disease , general – septicemia , and specific infective diseases following trauma .
- Acute renal failure after injuries
- Pathology of wound healing and repair and timing of the wound .
- Diseases and morbid states caused by trauma.
- Psychic changes and disabilities following trauma.

- Exacerbation of disease caused by trauma.
- Trauma and tumor.
- Regional and systemic injuries and their medico legal aspects.
- Disabilities following trauma- disability evaluation and reporting.
- Wound cause by electricity and lightning
- Thermal injuries - wound caused by heat and cold.
- Mediation effects and injuries.
- Injuries produced by increased atmospheric pressure – blast injuries ; decreased atmospheric pressure; in criminal miscarriage; chemical agenda.
- Transportation injuries and hazard caused on the roads , railways, aviation and navigation.
- Perinatal and neonatal injuries- infanticide and battered baby.
- Injuries in sports:
 - Injuries due to sexual assaults and sex perversions.
 - Domestic , hospital and laboratory accidents and injuries.
 - Caused by : The animal and insects ; violent asphyxia
- In industries and agriculture. injuries in war
- Role and scope of radiological investigation in Forensic Traumatology.