1. **GOALS:-**

The goal of the teaching of postgraduate students in Forensic Medicine is to produce a competent specialist who:

(i) is able to provide basic and specialized services in relation with Medico Legal responsibilities in the practice of medicine and process of crime investigation.

(ii) Must be capable of setting inquiries on right track in criminal matters and connected medico legal problems.

(iii) Has acquired competency to be teacher, trainer, researcher and leader in the field.

(iv) Has acquired knowledge of law in relation to practice of medicine, medical negligence and investigation of crime against human beings. Respect for the codes of medical ethics consistent with national health policy and law of the land as a citizen of India is of course mandatory for them.

2. **Objectives:-**

At the end of the course, the candidate shall be able to:

(i) Conduct a competent Medico legal Autopsy, collect appropriate evidence pertaining to Cause/Mode/Manner of death and identification of deceased and assailant. They must also be able to understand and interpret other important medico-legal aspects of death due to natural and unnatural conditions and poisonings.

(ii) Must be able to visit scene of crime and shall detect, describe, interpret the observations and conclude the procedure in a technically competent manner.

(iii) Have fundamental knowledge of all branches of medical disciplines related to their medico-legal applications. They must also be able to refer and understand relevant application of few other branches of science like botany, zoology, chemistry, and physics. It is also expected that they must be reasonably aware of using computer.

(iv) be aware of laws in relation to medico-legal work, medical practice and be acquainted with related relevant amendments and also related judgments passed by constitutional courts.
(v) Understand the important procedures and applicability of the general principals of analytical toxicology, ballistics, and immunology, occupational and environmental hazards.

(vi) Serve as a future teacher, trainer, researcher and leader in the field of medico-legal faculty. They must also be able to offer technically competent consultancy services to the health, home and law departments in connection with medico-legal work, crime investigation process and courts.

3. **Syllabus:-**

**THEORY**

3.1 **Basic medical sciences namely Anatomy, Physiology, Pharmacology, Pathology and Microbiology as applied to Forensic Medicine.**

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.1</td>
<td>Surface Land marks &amp; regional Anatomy of medico legal significance.</td>
</tr>
<tr>
<td>3.1.2</td>
<td>Comparative anatomical study of Male &amp; Female skeleton.</td>
</tr>
<tr>
<td>3.1.3</td>
<td>Anatomy of neck with special reference to violent Asphyxial deaths.</td>
</tr>
<tr>
<td>3.1.4</td>
<td>Anatomy of reproductive organs.</td>
</tr>
<tr>
<td>3.1.4</td>
<td>Gross anatomy of heart and coronaries.</td>
</tr>
<tr>
<td>3.1.5</td>
<td>Outline of embryonic / foetal development.</td>
</tr>
<tr>
<td>3.1.6</td>
<td>Microscopic anatomy (histology of different organs &amp; tissues, such as brain, heart, lungs, liver, kidneys, thyroid, adrenals, bone, skin)</td>
</tr>
<tr>
<td>3.1.7</td>
<td>Body water &amp; fluid balance.</td>
</tr>
<tr>
<td>3.1.8</td>
<td>Blood grouping &amp; RH incompatibility.</td>
</tr>
<tr>
<td>3.1.9</td>
<td>Physiology of menses &amp; pregnancy.</td>
</tr>
<tr>
<td>3.1.10</td>
<td>Physiology of thermo-regulation.</td>
</tr>
<tr>
<td>3.1.11</td>
<td>Patho-physiology of shock.</td>
</tr>
<tr>
<td>3.1.12</td>
<td>Blood sugar regulation &amp; diabetic coma, hypoglycaemic coma.</td>
</tr>
<tr>
<td>3.1.13</td>
<td>Outline of the functions of circulation, respiration, and haemopoetic, and nervous, digestive, endocrine, excretory, reproductive and musculo-skeletal system. Patho-physiology of sexual functions and histopathology.</td>
</tr>
<tr>
<td>3.1.14</td>
<td>General pathology: Pathology of cell / tissues – Degenerative changes &amp; 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.</td>
</tr>
<tr>
<td>3.1.15</td>
<td>Body’s local and systemic response to trauma.</td>
</tr>
<tr>
<td>3.1.16</td>
<td>Healing and fibrosis (Pathology of scar)</td>
</tr>
<tr>
<td>3.1.17</td>
<td>Common, general and systemic diseases and caused by physical/chemical agents.</td>
</tr>
<tr>
<td>3.1.18</td>
<td>Disorders of infancy and old age changes relevant to forensic medicine.</td>
</tr>
</tbody>
</table>
3.1.19 Pathology gross and microscopic in myocardial infarction, congenital heart diseases, tuberculosis, cirrhosis, malnutrition, starvation.
3.1.20 Histology with important Staining Procedures
3.1.21 Microbiology and serology of venereal diseases infections.
3.1.22 Microbiology of Cadavers.
3.1.23 Relevant General Pharmacology, Pharmacology of Important Antidotes & Drugs of Addiction, Anti-sera, Hormones & Anaesthetic Drugs.

3.2 **Forensic Medicine including other clinical subjects as applied to it.**

3.2.1 Identification of the living and dead, determination of race and religion, sex, age, external peculiarities such as moles, birth marks, occupational marks, anthropometry, finger prints, and foot prints handwriting etc. and their medico legal aspects. Evaluation of evidence from the skeleton. Problems of reconstruction, superimposition technique.

3.2.2 Medico legal aspects of allergy and anaphylaxis.
3.2.3 Evidence from trace elements like hair and biological stains of blood, semen, sweat, saliva, milk, sputum etc.
3.2.4. Laboratory investigations as required in medico legal situations like unconsciousness, sudden death from unknown causes, therapeutic misadventures, industrial exposures etc.
3.2.5. Outlines of analytical and Histopathological techniques as applied to forensic medicine.
3.2.6. Injuries and Thermal death from cold coma, heat coma, electricity coma, lightning and radiation.
3.2.7. Death from starvation.
3.2.8. Mechanical injuries & their medico legal aspects in relation to nature of injuries, accidental, suicidal, homicidal distinction between injuries caused during life and after death. Medico legal examination of injured person. Regional and Transportation injuries.
3.2.9. Examination of weapon in relation to inflicted injuries.
3.2.10. Firearm and Thermal injuries.
3.2.11. Causes of death from wounds.
3.2.12. Forensic radiology in identification, pathology, dentistry, child abuse, trauma, medico legal implications of radiological procedures.
3.2.13. **FORENSIC PSYCHIATRY:** Various Acts in relation to Forensic psychiatry, Classification of mental disorders and abnormal human behaviours. Medico legal aspects of INSANITY and abnormal human behaviour 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.
3.2.15. Psychological assessment & testing personality and its disorders, abnormal psychology, health psychology, assessment strategies in medical education.

3.2.17. Counselling in normal sexual behavior and sex related disorders.

3.2.18. Medico legal aspects of emergency & resuscitation intensive care, medical negligence death.

3.2.19. Trauma, Work Stress & Disease.

3.2.20. Torture medicine: Medico legal aspects & duties of physician in cases of torture. Type of personalities.


3.2.22. Bombs and other explosives. Biological and chemical warfare and barotrauma.

3.2.23. Impotence, Sterility, Artificial insemination, sterilization. Test tube babies & their medico legal aspects.

3.2.24. HIV and AIDS.

3.2.25. Virginity, Pregnancy, Delivery in relation to suit of nullity of marriage, divorce, and legitimacy affiliation cases etc.


3.2.27. Sexual Offences – Rape, Incest, unnatural sexual offences such as sodomy, Tribadism, Bestiality & Buccal Coitus, Sexual perversions.

3.2.28. Infanticide.

3.3 **Forensic Toxicology & Medical Jurisprudence**

3.3.1. General & Forensic Toxicology including Classification, Mechanism of Action, Clinical Features, Diagnosis, Management, Autopsy appearances & Medico-legal Importance of Poisons.

3.3.2. Addiction, de-addictions and drug abuse.

3.3.3. Important Toxicological Analytical Techniques.

3.3.4. Forensic Science: Recent Advances & Modern Trends.

3.3.5. Introduction & working of various Wings of Forensic Science Laboratory. Immunology, Examination of Biological Trace material Evidence. Ballistics, Identification. Crime Laboratory, Forensic Photography.

3.3.6. Definition of Medical Jurisprudence.

3.3.7. 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.

3.3.8. Regulation of medical profession, various governing bodies, their constitution & functions. Laws in relation to medical man.

3.3.9. Rights, duties & privileges of a registered medical practitioner.

3.3.10. Informed consent in medical practice. Infamous conduct. Medical malpraxis.

3.3.11. Physician duties under various public health & medical Acts.
3.3.12. Problems of privileges and confidentiality etc. Physician in the Witness Box.
3.3.13. Liabilities of Hospitals, nursing home and public dispensaries to patients.
3.3.15. Relevant parts of Indian Penal Code of criminal procedure, Indian Evidence Act, Suppression on Immoral Trafficking Act. Workman’s Compensation Act and other Laws related to medical practice.
3.3.16. Law & Procedures related to Organ Transplantation.
3.3.17. Legal & Ethical aspects of Family planning procedures.
3.3.18. Therapeutic trial & human experimentation etc.
3.3.19. Medico legal aspects of Organ & Tissue transplantation.
3.3.20. Euthanasia.
3.3.21. Supreme Court and High Court Landmark judgments related to Forensic Medicine and Medical Jurisprudence.
3.3.23. Relevant Sections of IPC, Cr Pc, IEA, and Acts like CPA, MTP, PCPNDT, NDPS, OT, NHRC.
3.3.24. Medical certification of cause of death and relevant vital statistics.
3.3.25. Day-to-day MLC problems in hospitals.
3.3.26. Recent Laws applicable to medical man.
3.3.27. Value of medical opinion in the court of law.

3.4 Forensic Pathology including Forensic immunology & Recent advances.

3.4.1. Medico legal autopsy of dead body, decomposed and mutilated body or its fragments / skeleton, bones, exhumation & rules regarding it.
3.4.3. Death from sudden violent, suspicious, unknown and unnatural cause, disease following trauma.
3.4.4. Basic concepts of immunology and serology.
3.4.5. Principles of various immune-serological tests, precipitin test, pregnancy test, sperm antibody test.
3.4.6. Role of immunological techniques in crime investigation and exclusion of parentage.
3.4.7. Incompatibility and adverse reaction of drugs commonly used in therapy etc.
3.4.8. Anaphylaxis and hypersensitivity reactions.
3.4.9. Different types of teaching aids, methods of teaching & question paper
formation of different types (MCQs, Structures, Traditional, Short, and Essay Types).

3.4.10. DNA & Finger Print System, Lie Detector & Polygraph, Norco-analysis.
3.4.11. National Health policies.
3.4.12. Life saving maneuvers and pre-hospital first aid.
3.4.13. Routine and advanced Imaging Techniques and equipments.
3.4.15. Basics of medical education technology and research methodology.
3.4.16. Computer and its use and its applicability in the specialty.
3.4.17. Medical auditing.

Note: The project syllabus is minimal and may require further improvement time to time as per requirements of MCI and the advances in the specialty of forensic medicine & toxicology.