

M.S. Ramaiah University of Applied Sciences

New BEL Road, MSR Nagar, Bangalore – 560054



**RAMAIAH
UNIVERSITY**
OF APPLIED SCIENCES

PO, PSO & CO

Programme: MD in Forensic Medicine

Programme Code: 134

Programme Outcome (PO)

Programme Specific Outcome (PSO)

Course Outcomes (CO)



Shalini

Principal and Dean

M.S. Ramaiah Medical College and Hospital
M.S. Ramaiah University of Applied Sciences
Bangalore-560054

Ramaiah Medical College (RMC)

Programme Outcomes

Post Graduate Programme: MD in Forensic Medicine

Programme objectives (PO) for MD Forensic Medicine Postgraduate students:

- PO1. Develop knowledge of various codes of conduct and ethics in Medical practice. (C)
- PO2. Acquire knowledge of medical negligence and measures to prevent negligence. (C)
- PO3. Be able to identify medico-legal cases, Examine and Certify in Various medico-legal situations, know the legal and medical Responsibilities and exhibit professionalism in handling such Cases, Ethical researcher and teacher (A, C, P)
- PO4. Be able to conduct post-mortem examination independently and draft a certificate. Skeletal remains examination and draft a Certificate. (A, C, P)

Programme Specific Outcomes (PSOs)

Programme specific outcome (PSO) for MD Forensic Medicine Postgraduate students:

- PSO1 - To acquire Knowledge of various codes of conduct related to medical practice which evolved from code's of - Hammurabi, Dhanavatri, Charaka's, Sushruta's Hippocratic oath, to the present codes of conduct and ethics adopted by world medical association with respect to biomedical ethics, and guidelines laid down by ICMR regarding Human research. (C)
- PSO2- To acquire knowledge about various acts of omission and commission which amounts to Medical negligence, its types, liabilities and adopt measures like informed consent, proper documentation, patient rapport etc. to prevent medical negligence. (C)
- PSO3 - To apply skills learnt in casualty, Radiology, Pathology, Psychiatry in identifying various medico legal cases that come to the hospital and the legal formalities to be completed in such scenarios as advocated by the law of land. (A, C, P)
- PSO4- To exhibit professionalism and Communication skills during treatment, collection, preservation, dispatch of evidence in cases of trauma, sexual assaults, drunkenness, Certification in cases of death, assessment of age and intimation to law enforcing agencies, teaching activities and research (A, C, P)
- PSO5 - To apply skills learnt in Anatomy, Pathology, Forensic Science lab and Autopsy postings for the conduction of post-mortem in various circumstances, preservation of various viscera and body fluids for toxicological and biochemical analysis, microbiological and histopathological examinations and to be able to interpret autopsy findings and results of various test in drafting of post-mortem certificate and similarly in Skeletal remains examination and drafting certificate. (A, C, P)
- PSO6 - To teach and assess medical students, acquire skills to conduct research (Including thesis work independently or as part of a team. (C, P)

Shalini

Principal and Dean

M.S. Ramaiah Medical College and Hospital
M.S. Ramaiah University of Applied Sciences
Bangalore-560054



Course Outcomes (COs)

Course Title & Code: Concepts and Applied Basics of Forensic Medicine, basic sciences and allied (MDC529A)

Subjects At the end of the course, the students should be able to:

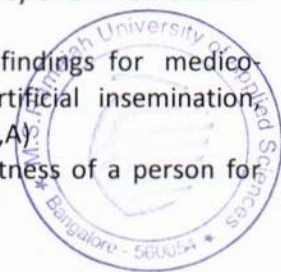
- CO-1. The student should be well versed with Anatomy of parts and organs of the body which are important from the medico-legal aspect.(C)
- CO-2. The student should have understood the physiology and biochemical aspects of phenomena that are important in the body from the medico-legal viewpoint such as fluid and electrolyte balance, thermoregulation in newborn and adults, endocrine functions, sexual behavior and reproductive system.(C)
- CO-3. The student should be well versed with Pathophysiology of vital processes and response mechanisms that modulate tissue and organ reaction to all forms of injury and have a bearing on ante mortem and postmortem appearance in medico-legal cases, assessment of the duration of injuries and correlate trauma and disease, pathology of sudden death, patho-physiology of shock, common infections and infestations of medico-legal significance. (C)
- CO-4. The student should have acquired adequate knowledge of dentistry and forensic radiology for solution of medico-legal problems like injuries, age determination and identification.(C,P)
- CO-5. Should be introduced to basic research methodology so that he/she can independently conduct fundamental and applied research and he/she should independently write the thesis in accordance with the prescribed instructions as expected of international standards(C,P)
- CO-6. Have knowledge of biomedical waste management and be familiar with appropriate disposal methods for each specimen, sample, reagents, instruments, autoclaving techniques, recycling of products and e-waste as applicable to the specific courses(C,P)

Course Outcomes (COs)

Course Title & Code: A Clinical Forensic Medicine and medical jurisprudence. (MDC530A)

Subjects At the end of the course, the students should be able to:

- CO-1. The student should be able to Examine, initiate treatment, assess legal implications and prepare report or certificate in cases of physical assault, suspected drunkenness, sexual offences, consummation of marriage and disputed paternity.(C,P,A)
- CO-2. The student should be able to Collect, preserve and dispatch the specimen/material to the concerned authority and interpret the clinical and laboratory findings which are reported. (C,P,A)
- CO-3. The student should be able to determine the age and establish identity of an individual for medico-legal purpose. (C,P,A)
- CO-4. The student should be able to perform examination and interpret findings for medico-legal purposes in cases pertaining to pregnancy, delivery, artificial insemination, abortion, sterilization, Impotence, AIDS and infectious disease. (C,P,A)
- CO-5. The student should be able to examine and assess the medical fitness of a person for



insurance, government service, sickness and fitness on recovery from illness and disability in industrial accidents and diseases. (C,P,A)

- CO-6. The student should be able to examine medico-legal problems related to clinical disciplines of medicine and allied subjects, Pediatrics, Surgery and allied subjects, ENT
- CO-7. The student should be able to identify the cases of torture and violation of human rights and issues thereto and perform autopsy independently in such cases and show professionalism while dealing with police, public and relatives and in preparing report. (C,P,A)
- CO-8. The student should know the history of Forensic Medicine, the legal and medico-legal system in India, medical ethics and the law in relation to medical practice, declarations, oath, etiquette, Medical Council of India, disciplinary control, rights and duties of a registered medical practitioner's professional misconduct, consent, confidentiality, medical negligence (including all related issues) and Consumer Protection Act. (C)
- CO-9. The student should be able to describe medical ethics and law in relation to organ transplantation, biomedical human research and experimentation, human rights, cloning, genetic engineering, human genome, citizen's charter and International codes of medical ethics, artificial insemination, abortion, antenatal sex, foetus, genetics and euthanasia. (C)

Course Outcomes (COs)

Course Title & Code: Forensic pathology and toxicology. (MDC531A)

Subjects At the end of the course, the students should be able to:

- CO-1. The student should be able to apply the principals involved in methods of identification of human remains by race, age, sex, religion, complexion, stature, hair, teeth, anthropometry, dactylography, foot prints, hairs, tattoos, poroscopy and superimposition techniques.
- CO-2. The student should be able to perform medico-legal post-mortem in adults, in infant deaths and to differentiate amongst live birth, still birth and dead born, in special circumstances like death due to alleged medical negligence as in operative and anesthetic deaths and be able to exhume, collect, preserve and dispatch specimens or trace evidence to the appropriate authority
- CO-3. The student should be able to diagnose and describe the pathology of wounds, mechanical and regional injuries, ballistics and wound ballistics, electrical injuries, lightning, neglect and starvation, thermal injuries, deaths associated with sexual offences, pregnancy, delivery, abortion, child abuse, dysbarism and barotraumas.
- CO-4. The student should be able to diagnose and classify death, identify the signs of death, post-mortem changes, interpret autopsy findings, artifacts and results of the other relevant investigations to logically conclude the cause, manner (suicidal, homicidal and accidental) and time of death, to describe patho-physiology of shock and neurogenic shock, asphyxia, classification, medico-legal aspects and postmortem findings of different types of asphyxial deaths.
- CO-5. The student should be able to manage medico-legal responsibilities in mass disasters involving multiple deaths like fire, traffic accident, aircraft accident, rail accident and natural calamities. (C,P,A)
- CO-6. The student should be able to describe the law relating to poisons, drugs, cosmetics, narcotic drugs and psychotropic substances, to describe the basic principles of

Shahine

Principal and Dean

pharmacokinetics and pharmacodynamics of poisonous substances, toxic hazards of occupation, industry, environment and the principles of predictive toxicology.

- CO-7.** The student should be able to examine and diagnose poisoning cases and apply principles of general management and organ system approach for the management of poisoning cases and be able to describe the signs, symptoms, diagnosis and management of common acute and chronic poisoning due to Corrosives, Nonmetallic substances, Insecticides and weed killers, Metallic substances, Vegetable and organic irritants, Somniferous compounds, Inebriant substances, Deliriant substances, Food Contamination/adulteration, spinal and cardiac poisons, Asphyxiants, Household toxins, Toxic envenomation, Biological and chemical warfare, Environmental and Occupational intoxicants.
- CO-8.** The student should be able to collect, preserve and dispatch material/s for analysis, interpret the laboratory findings and perform the Medico-legal formalities in a case of poisoning.

Course Outcomes (COs)

Course Title & Code: Recent advances in Forensic Medicine. (MDC532A)

Subjects At the end of the course, the students should be able to:

- CO-1.** The student should have knowledge of general forensic principle of ballistics, serology, analytical toxicology, photography, crime scene investigation, Forensic cyber technology, forensic Taphonomy, biohazards, trace evidence, investigation of questioned documents and forgery, DNA profiling, biological stains and ethical aspects of Forensic Procedures including Narco-analysis, Brain mapping and Polygraph.(C,P)
- CO-2.** The student should describe the basic principles of techniques used in toxicological laboratory namely TLC, GLC, ASS, HPLC and Breath Alcohol Analyzer and to be able to demonstrate the methods of identification and analysis of common poisons.(C,P)
- CO-3.** The student should know about the recent amendments in various acts, IPCs, CrPCs and important court proceedings and judgements pertaining to medical practice (C)
- CO-4.** The student should know about the recent advances in Forensic Medicine as published in national and international journals and knowledge gained by attending CMEs, Updates, Seminars, Workshops at State level and National level conferences. (C)
- CO-5.** The student should be able to explain the common terminologies of forensic importance in Psychiatry and the medico-legal aspects of Psychiatry and mental health and be able to describe medico-legal aspects of drug addiction. (C)
- CO-6.** The student should be able to civil and criminal responsibilities of a mentally ill person. (C)
- CO-7.** The student should be able to describe the role of Psychiatry and Psychology in criminal investigation, punishment and trial (C)



Shalini

Principal and Dean

M.S. Ramaiah Medical College and Hospital
M.S. Ramaiah University of Applied Sciences
Bangalore-560054

Course Outcomes (COs)

Course Title & Code: Thesis - Forensic medicine (MDP508A)

Subjects At the end of the course, the students should be able to:

- CO-1. Should be introduced to basic research methodology so that he/she can independently conduct fundamental and applied research and he/she should independently write the thesis in accordance with the prescribed instructions as expected of international standards(C,P)
- CO-2. The student should demonstrate integrity, accountability, respect, compassion and dedicated patient care and a commitment to excellence, continuous professional development and ethical principles relating to research conduct and research publication as applicable to all the specific courses



Registrar
M.S. Ramaiah University of Applied Sciences
Bangalore - 560 054



Principal and Dean
M.S. Ramaiah Medical College and Hospital
M.S. Ramaiah University of Applied Sciences
Bangalore-560054