



# **MGM INSTITUTE OF HEALTH SCIENCES**

(Deemed University u/s 3 of UGC Act, 1956)

**Grade 'A' Accredited by NAAC**

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## **MGM 27 DIPLOMA IN ANAESTHESIA**

### **Program Outcomes**

PO1. A post graduate Diploma student having undergone the required training in the course should be able to recognize the health needs of the community.

PO2. The student should be competent to handle effectively medical problems and should be aware of the recent advances pertaining to her/his specialty.

PO3. The student should be a highly competent specialist with broad range of skills that will enable her/him to practice his/her speciality independently.

PO4. The PG student should also acquire the basic skills in teaching of medical/para-medical students.

PO5. She/he is also expected to know the principles of research methodology and modes of consulting library.

PO6. The student should attend conferences, workshops and CMEs regularly to upgrade her/ his knowledge.

### **Program Specific Outcomes**

PSO1. Student should have fair knowledge of basic sciences (Anatomy, Physiology, Biochemistry, Microbiology, Pathology and Pharmacology) as applied to all specialities.

PSO2. The student should have sufficient knowledge of his subject including recent advances.

PSO3. The student should be fully conversant with the bedside procedures (diagnostic and therapeutic) and having knowledge of latest diagnostics and therapeutics available.

PSO4. Student should have acquired practical and procedural skills related to the subject.

PSO5. Critically evaluate, initiate investigation and clinically manage all the cases in his/her speciality

PSO6. Should plan and advise measures for the prevention and rehabilitation of patients with

various pathological conditions.

PSO7. Able to ensure the implementation of National Health Programmes, particularly in the field of specialisation Acquire training skills in research methodology, professionalism, attitude and communication skills.

PSO8. Student must know basic concepts of research methodology, plan a research project, consult library and online resources, has basic knowledge of statistics and can evaluate published studies.

PSO9. Should be able to practice the specialty of choice ethically.

PSO10. Recognize the health needs of patients and carry out professional obligations in keeping with principles of National Health Policy and professional ethics.

### **Teaching skills in the subject**

PSO11. Student should learn the basic methodology of teaching and develop competence in teaching medical/paramedical students.

PSO12. Student Should have acquired Problem Solving skills

### **Course Outcomes**

CO 1. Describe the development and history of anaesthesia as a specialty with knowledge of important

personalities who have contributed towards it.

CO 2. Demonstrate knowledge of Anatomy related to:

- Diaphragm, upper and lower airway lung, heart and coronary circulation, liver and kidney.
- Regional anaesthesia - field block, central neuraxial, blockade, block for acute pain states.
- Procedures like -Intramuscular injections, arterial and venous cannulations.
- Patient Positioning under anaesthesia.

CO 3. Demonstrate knowledge of Physiology of various systems (respiratory, cardiovascular, hepatobiliary, renal, endocrine, during pregnancy, haematological, neuromuscular, regulation of temperature and metabolism, stress response, cerebral blood flow and ICP, central, autonomic

and peripheral nervous systems, metabolic response to stress and trauma) in detail and translate its application in a problem solving manner.

CO 4. Demonstrate knowledge of Biochemistry relevant to fluid balance and blood transfusion, preoperative fluid therapy, acid base homeostasis in health and diseases.

CO 5. Demonstrate knowledge of commonly used drugs in anaesthesia practice (premedication, induction agents - intra-venous and inhalational, neuromuscular blocking agents and reversal of muscle relaxants) - general principles, concepts of 3 pharmacokinetics and pharmacodynamics, drug interactions with the other drugs taken concomitantly by the patient and anaphylactoid reactions.

CO 6. Demonstrate knowledge of gas laws, medical gas supply system, fluidics, electricity, diathermy and oxygen therapy.

CO 7. Demonstrate knowledge of 'principles of physics' that govern functions of basic anaesthesia delivery equipment, airway devices – (laryngoscopes, airways etc), breathing systems and monitors, fibre optics, Lasers, Pacemakers and defibrillators, monitoring equipments (used for assessment of cardiac functions, temperature, respiratory functions, blood gases, intracranial pressure, depth of anaesthesia and neuromuscular block), Sterilization of equipments, manufacture, filling and transport of gases and liquid oxygen. etc.

CO 8. Demonstrate knowledge of importance of pre-anaesthetic assessment and optimization of a patient; consisting of evaluation, interpretation of laboratory investigation as applied to the care of the patients in planning and conduct of general anaesthesia.

CO 9. Demonstrate knowledge of basic life support, advanced cardiac, trauma life support, and neonatal resuscitation according to latest guidelines.

CO 10. Demonstrate knowledge of principles of sterilization and universal precautions, selection, maintenance and sterilization of anaesthesia and related equipment, Infection control, cross contamination in OT and ICU. Immune response and anaesthesia.

CO 11. Demonstrate knowledge of principles of artificial ventilation, management of unconscious patients, oxygen therapy, shock- (pathophysiology and management) and various protocols related to Intensive Care Unit.

CO 12. Demonstrate knowledge pertaining to special anaesthetic techniques as relevant to: Outpatient anaesthesia, hypotensive anaesthesia, anaesthesia in abnormal environments including rural area and calamitous situations

Associated medical disorders in surgical patients

Geriatric and paediatric anaesthesia, Emergency, ENT, orthopaedic, ophthalmology, obstetrics, dental, radio-diagnosis and radiotherapy.

Induced hypothermia, incidental, environmental safety of patient.

Malignant hyperthermia myasthenia gravis, GB syndrome and other neuromuscular diseases, obesity, COPD, Diabetes mellitus, bronchial asthma and hypertensive crises.

- Principles of anaesthetic management of neuro/cardiac/thoracic/vascular/burns and plastic surgery.
- Anaesthesia for patients with severe cardiac, respiratory, renal and hepatobiliary disorder posted for unrelated surgery.
- Demonstrate knowledge of post-operative care in the post-anaesthesia recovery room, in terms of management of Post-operative pain: various modalities nausea and vomiting.

CO 13. Identified emergencies and postoperative complications. Special precautions to be taken in specific surgical patients.

CO 14. Demonstrate knowledge of acute pain management, chronic pain therapy & therapeutic nerve blocks, acupuncture, acupressure and other non-conventional methods of treatment.

CO 15. Describe documentation, medico-legal aspects of anaesthesia and concept of informed consent.

CO 16. Demonstrate ability to interpret blood gas analysis and other relevant biochemical values, various function tests and basics of measurement techniques, ECG.

CO 17. Explain blood coagulation mechanism, and their disturbances, rational use of blood and blood components.

CO 18. Shock, types, pathogenesis and management of patients in shock, renal failure, critically ill and/or on ventilator, Multiple organ failure.

CO 19. Demonstrate knowledge pertaining to care of terminally ill, Hospices management, Do not resuscitate orders.

CO 20. Demonstrate knowledge of general principles of medical audit and Critical incident reporting.

CO 21. Skill Development

- Spinal Anaesthesia
- Epidural
- Combined Spinal and Epidural
- Venous / Arterial Cannulation
- General Anaesthesia:
  - Use of mask, intubation with normal and with different types of tubes
  - Supraglottic devices
  - Use of Ambu bag.
- Different type of nerve blocks
  - PNS (Peripheral nerve stimulator)
- US Guided blocks.



**Dr. Rajesh B. Goel**  
Registrar

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