3 YEARS TEACHING SCHEDULE FOR MD ANAESTHESIOLOGY

The course contents of **1st year:**

1. Anatomy

- Anatomy of Respiratory system (Diaphragm, upper and lower airway)
- Anatomy of Vertebral column
- Anatomy of brachial plexus
- Anatomy of Cardio vascular system
- Anatomy of Central nervous system
- Anatomy of different systems (renal, hepatobilliary, endocrine)

2. **Physics**

- Anaesthesia machine
- Airway equipment including laryngoscopes, endotracheal tubes /supraglottic airway devices
- Breathing systems
- Monitoring in anaesthesia : BIS, entropy, capnography, pulse oximetery, respiratory functions monitoring, CO monitoring, neuromuscular monitoring
- Gas laws, medical gas supply system (gas cylinders and pipelines)
- Electrical safety in OT
- Oxygen therapy

3. **Physiology**

- Theories of anaesthesia
- Respiratory and cardiovascular system
- Hepatobiliary, renal and endocrine system,
- Physiological changes in pregnancy,
- Blood and coagulation cascade
- Muscle and N-M junction, Nerve impulse transmission,
- ECG
- Regulation of temperature and metabolism
- Cerebral blood flow and ICP.
- Central, autonomic and peripheral nervous systems.

4. **Pharmacology**

- Pre-anesthetic medications
- Intravenous Anaesthetic Drugs Part-1
- Intravenous Anaesthetic Drugs Part-2
- Inhalational Anaesthetic Agents Part-1
- Inhalational Anaesthetic Agents Part-2
- Analgesic Agents-Opioids And Non Opiods Part 1
- Analgesic Agents-Opioids And Non Opiods Part 2

- Factors Affecting Metabolism Of Neuromuscular blocking Drugs.
- Neuromuscular Blocking Agents Depolarising Part 1
- Neuromuscular Blocking Agents Non-Depolarising Part 2
- Cholinesterase Inhibitors,Anticholinergic Drugs

5. Biochemistry

Body fluid composition

- Peri-operative fluid therapy
- Electrolyte imbalances and their management
- Blood and blood products
- Acid base homeostasis in health
- Acid base derangements

6. Pre Anaesthetic Check Up

7. Post Anesthesia Care Unit

- Recovery and discharge criteria
- Management of different problems
- Airway integrity and compromise.
    - Arrhythmia
    - Hypertension
    - Hypotension
    - Pain prevention and pain relief
    - Nausea and vomiting
    - Decreased urine output
    - Emergence delirium
    - Delayed emergence from anaesthesia
    - Shivering
    - Post-obstructive pulmonary edema.

8. Positioning during anesthesia

9. Documentation and medico-legal aspects of anaesthesia and concept of informed consent.

10. Resuscitation –

- Basic and advanced life support (cardiac and trauma life support)
- Neonatal resuscitation

11. Introduction to Research methodology, basics of biostatistics.

The course contents of **2nd year:**

1. Anatomy

- celiac plexus, lumbar plexus, stellate ganglion
- related to blocks for lower limb.

2. Physics

- vaporizers
- fibroptics.
- Laser
- Pacemaker and defibrillator
- Sterilization of OT equipments
- Environmental safety of patient.

3. Pharmacology

Drugs used in

- cardiovascular
- respiratory
- endocrine
- renal
- CNS disorders.

4. Pulmonary function tests

5. Trauma

- Organise resources in case of mass casualty/ disaster management/perform Triage
- Rescucitation in polytrauma patients
- Anesthetic management of patient with facio-maxillary injury
- Diagnosis and management of blunt trauma abdomen
- Diagnosis and management of chest injury
- Massive blood transfusion

6. Special anaesthetic techniques

- Outpatient anaesthesia- CT, MRI, radiological procedures, MECT
- Hypotensive anaesthesia
- Anaesthesia in abnormal environments including rural area and calamitous situations

7. Airway

- Assessment of difficult airway
- Algorithm for management of failed intubation
- Anesthetic management of patient of TMJ ankylosis
- Anesthetic management of patient of burn-contracture neck

8. Techniques of regional anesthesia

- Peripheral nerve blocks
- Central neuraxial blocks
- USG guided blocks

9. Obstetric anesthesia

- Obstetric Haemorrhage
- Anaesthetic Implications And Management
- Aspiration Prophylaxis In Labour And Mendelson Syndrome
- Anaemia With Pregnancy
- Hypertensive Disorders In Pregnancy
- Fetal Circulation And Placental Transfer Of Anaesthetic Drugs

10. Pediatric Anaesthesia

- Basics
- Fluid and blood therapy
- Surgical procedures in neonates
- Surgical procedures in children
- Regional anesthesia and pain management
- Anaesthetic management of foreign body bronchus

11. Geriatric Anaesthesia

- General considerations in geriatric patients
- Anaesthetic management of TURP
- Anaesthetic management of joint replacement surgeries

12. ENT

- Tracheostomy – indications and care
- MLS
- Anaesthetic management of laryngectomy

13. Eye

- Anaesthetic management of Cataract surgeries
- Orbital blocks

14. Endocrinology

- Anaesthetic management of Hypo- and hyper- thyroidism
- Anaesthetic management of patient with diabetes mellitus
- Anaesthetic considerations in an obese patient

15. Respiratory system

- Pre-operative optimization of a patient with COPD
- Diagnosis and management of pulmonary embolism
- Anaesthetic management of patient with bronchial asthma

- Anaesthetic management of patient with restrictive lung diseases

16. ICU

- Introduction to artificial ventilation
- ARDS and its management
- Shock - pathophysiology and management
- Physiological scoring system
- Prevention of nosocomial infections
- Nutritional therapy
- Sterilisation
- Role of USG in ICU

17. Medical statistics relevant to data collection, analysis, record keeping

18. Care of terminally ill, Hospices management.

The course contents of **3rd year** :

1. Neuro-anesthesia

- Anaesthetic management of posterior fossa surgery.
- Anaesthetic management of traumatic brain injury.
- Anaesthetic management of intracerebral aneurysm.
- Anaesthetic management of pituitary tumors.
- Anaesthetic management of spine surgeries.
- Anaesthetic management of myasthenia gravis.

2. Cardio-thoracic anesthesia

- Anaesthetic management of patient with valvular heart disease
- Anaesthetic management of patient posted for CABG
- Anaesthetic management of patient with congenital heart diseases
- Physiological considerations during one-lung anesthesia
- Different techniques for one-lung anesthesia
- Anaesthetic considerations of lung resection

3. Transplant anesthesia

- Anaesthetic considerations for liver transplant
- Anaesthetic considerations for renal transplant
- Management of patient with ARF and CRF
- Brain- dead optimization and organ retrieval

4. Hepato-biliary anesthesia

- Anaesthetic considerations for patient with obstructive jaundice
- Anaesthetic management of patient posted for laparoscopic cholecystectomy

5. Multiple organ failure – anesthesia concerns

6. Immune response and anaesthesia.

7. Chronic pain therapy

- Different modalities
- Anatomy, indications, techniques of chemical sympathectomy.
- Management of neuropathic pain
- Epidural steroid injection
- Management of cancer pain

8. ICU

- Prevention of nosocomial infections
- Infection control, cross- contamination in OT and ICU
- Monitoring in ICU

9. Principles of human resources and material management.

10. General principles of medical audit and critical incident reporting

11. Simulator training

12. Medical and para-medical teaching

13. Medical education including evidence based medical education.

14. Hospital, ICU and OT design and planning.

Teaching methodology includes

- Seminars
- Journal clubs
- Symposia
- Case discussions
- Guest lectures
- OT table teaching
- Hands-on training
- Teaching of UGs, Interns and nursing staff
- Research presentations (poster and paper at national/state conferences)
- Research paper publications
- Morbidity and mortality clinics
- Monthly assessment
- Logbook maintenance